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SEXUAL DEBILITY IN MAN

BY

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Domine pagina nostra sapit.

—MARTIAL.

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To the
SEXUAL CRIPPLES OF THE UNITED STATES
WHOSE INFIRMITIES HAVE IN PART
CONTRIBUTED TO HIS SUPPORT,
THIS BOOK IS GRATEFULLY DEDICATED
BY THEIR OBLIGED FRIEND,
THE AUTHOR.

28176

PREFACE.

THE writer does not for one moment delude himself with the belief that this book will supply a long-felt want. The principal reason for writing it is to introduce to the reading medical public sundry opinions the writer holds upon sexual weaknesses in men, which, although they may be at variance with ideas generally received in this country, he is convinced from experience are correct.

Thus in the chapter on Masturbation he has combated the old and time-honored belief that indulgence in this habit is the necessary prelude to both physical and mental degeneration, and, while not glossing over the dangers which may, under certain conditions, result from the habit, he has attempted to point out the folly of the hysterical denunciations which have been heaped upon it by pseudo-philanthropists and ignorant medical men. The question of castration in the case of masturbating lunatics has been brought up afresh for discussion, and the author has frankly stated his reasons for believing that, under certain circumstances, such a procedure would not only be justifiable, but proper. He has also separated Spermatorrhœa from Pollutions, aiming to show that the two are absolutely distinct and separate diseases; that spermatorrhœa is not the *finale* of pollutions, but is a disease *sui generis*, the symptoms, course, and treatment of which are entirely different from the latter. He has also striven to correct the foolish and ridiculous idea that the man

afflicted with spermatorrhœa is foredoomed to impotence and sexual uselessness.

In the chapter on Prostatorrhœa he has attempted to lay down the natural history and symptoms of this variety of disease, and has protested against the loose and unscientific method of regarding it as practically the same as prostatitis, with which latter disease, in his opinion, it has absolutely nothing in common.

The illustrations have been carefully prepared from nature by Dr. Frederic E. Sondern, of New York, to whom the writer desires to make his acknowledgments and thanks. They are true to nature, except that the plate of "normal human semen" is a composite one. It has been made from several preparations, because in no single specimen was it possible to find combined all the various elements which enter into the normal semen. Whatever fate, however, may be reserved for the book, whether approval or disapproval, the writer can say with Montaigne, "C'est icy un livre de bonne foy, lecteur."

16 WEST THIRTY-SECOND STREET,
New York City.

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**ANATOMY OF THE SEXUAL ORGANS
IN THE MALE.**

SEXUAL DEBILITY IN MAN.

CHAPTER I.

PENIS.

THE *penis*, the male organ of generation, as well as the conduit for the urine in its passage from the bladder to the outer air, is, when pendent, a more or less cylindrical body; when erect it is converted into an irregular-shaped triangle with rounded edges. It starts from the rami of the pubes by two fibrous bands, the *crura penis*, and is attached in front to the pubes by a more slender band, the suspensory ligament. It is divided into three parts; the head, the body, and the root. It varies very much in both size and length, from a minimum of two inches in length and the diameter of a porcupine's quill (Roubaud), to a maximum of the thickness of a new-born child's body (Hyrtl), and a length which caused this portion of the body of Papilus to be immortalized in the epigram of Martial by the lines:

"Mentula tam magna est. . . ut possis, quoties arrigis, olfacere." (Book VI., Epigram 36.)

Few are so distinguished, but I remember that in the anatomical museum of the Harvard Medical School a penis is preserved which, when injected and erect, attained the length of thirteen inches, and the circumference of a New York policeman's night-stick. It belonged to a

negro who, in the flesh, was well known about the purlieus of the college, and the genial professor of anatomy, the late esteemed Oliver Wendell Holmes, always descanted with pride on its noble proportions, and the favor with which its happy possessor was held by his female friends, as a man of parts. This, with due respect to my good teacher in anatomy, is not a corollary, because length and size are no indication of virile force and vigor, as will be seen further on. But this has been excelled by Krügelstein's patient quoted in Hencke's *Zeitschrift*, in whom the membrum virile attained the magnificent length of eighteen inches.

The penis is covered with a thin layer of skin of a darker color than the rest of the epidermis, due to a greater pigmentation, and is devoid of fat except at its root (*mons veneris*). At a point corresponding to the *fossa glandis*, the skin becomes reduplicated or folded inward on itself, forming the prepuce or foreskin which usually covers the entire glans penis, and projects a little beyond it. At the under surface of the prepuce, connecting it with the glans penis and running nearly to the meatus, is a fold called the *frenum*. Except at its root and on the *mons veneris*, the penis is free from hair.

Body.—At its origin the penis is bifid (*crura*), but it speedily unites into one organ, and is composed of three parts: two *corpora cavernosa*, and one *corpus spongiosum*. The two *corpora cavernosa* spring from about the junction of the rami of the ischium and of the pubes, and are elliptical in shape. In front of the symphysis pubis they unite, and are attached to the pubes by the suspensory ligament. The two corpora unite smoothly over the dorsum penis, but beneath they leave a broad groove to receive the corpus spongiosum. This latter body starts from the deep perineal fascia at the junction of the cr and fits

into the groove between the two corpora cavernosa. At the commencement (root) it has a bulbous expansion (bulbus urethræ), and at its termination it widens out into a triangularly shaped body, the glans penis, the base of which is seated on the termination of the two corpora cavernosa which end in the fossa glandis. At its apex the glans penis is slit longitudinally, through which one end of the urethra runs, forming the meatus urinarius.

Corpora Cavernosa.—These two bodies start at the junction of the two crura, and are enclosed in a strong, extensible, fibrous sheath (albuginea), composed of elastic and contractile fibres. This along the union of the two corpora cavernosa dips down to form an imperfect partition which separates these two bodies, the septum pectiniforme. From the inner portion of the albuginea narrow bands of connective tissue dip down into the corpora cavernosa, dividing them into reticulated chambers (erectile tissue) into which the vessels open, said chambers being lined with epithelium, and furnished with smooth muscular fibres (Kölliker).

Corpus Spongiosum.—As already stated, this body starts from between the junction of the corpora cavernosa as the bulbus urethræ. It is also composed of trabeculated tissue which springs from the interior of its fibrous envelope. This is, however, indistinctly marked and difficult to trace (Hyrtl). It is, however, not directly connected with the corpora cavernosa. The erectile tissue is thinner and finer than that of the corpora cavernosa, and in erection it is never so firm nor so hard as are these latter bodies. Indeed, I believe that the glans never becomes thoroughly distended with blood, even during erection, unless this latter be violent.

Arteries.—The corpora cavernosa are supplied from the two arteriæ profundæ penis, a branch from the internal

pudic artery. They supply the corpora cavernosa, entering the trabeculæ, and sending branches along the septum pectiniforme. Some of these branches open into the venæ profundæ penis, while others open directly into the trabeculæ as convolutions, and are known as arteriæ helecinæ and assist in the physiology of erection.

The *corpus spongiosum* is supplied from the arteria bulbi, a branch also of the internal pudic. This artery ramifies in and about the bulb, and pierces the sheath of the corpus spongiosum entering the trabeculæ, and becomes convoluted under the name of helicine arteries, which are most abundant about the bulbus urethræ.

The *body of the penis* is supplied from the arteriæ dorsales penis (derived from the external pudic artery), which vessels send branches to the skin and penis, the prepuce and the external portion of the fibrous covering of the corpora cavernosa.

Veins.—The veins which return the blood from the genital organs of the male are the venæ profundæ penis and the vena dorsalis penis. They convey the blood from the corpora cavernosa, the corpus spongiosum, and the integument of the penis to the plexus of vessels which surrounds the neck of the bladder and the prostate, the plexus of Santorini, or the plexus venosus pudendalis, which open into the internal iliac vein.

Nerves.—These are derived as follows: the dorsal nerves from the pudic nerve, while the cavernous plexus which supplies the erectile portion of the penis is derived from the prostatic portion of the hypogastric plexus of the sympathetic.

URETHRA.

The urethra extends from the bladder to the glans penis; the opening at the bladder is called the ostium vesicæ, the opening at the external end the ostium cutaneum (meatus urinarius). It is divided into three portions, viz., the *prostatic*, the *membranous* (isthmus), and the *spongy or penile* portions. This latter is the longest (six or more inches [15 cm.] in length), and is contained in the corpus spongiosum penis, extending from the bulbus urethræ to end at the meatus. It varies in length, owing to its great capacity for extension; hence the marked extremes given from five and one-half to five and three-fourth inches (14 cm.) (Malgaigne) to twelve inches (30 cm.) (Sabatier). Hyrtl states that the average length is seven to eight inches (18 to 20 cm.), which is probably very nearly, if not absolutely, correct. Its calibre varies much in different portions of the canal, the average being three-eighths inch (9 mm.) in diameter (McClellan). It must be borne in mind that the male urethra is not an open pipe or tube, and unless distended has no lumen. A transverse section made at the prostatic portion of the urethra shows the canal as a crescent with the convexity upward; at the membranous portion the urethra looks like a star, and at different parts of the spongy penis the urethra varies in shape, being at the bulb transverse in shape, at the median portion crescentic with the convexity looking upward, and at the meatus vertical (McClellan). The meatus is the narrowest portion of the entire urethra, and the opening is vertical to become dilated a short distance from the opening. This dilatation is quite marked, and is known as the fossa navicularis. The portion which extends from the meatus to the pos-

terior border of the fossa is the urethra glandis, which, while it is a portion of the anatomical, is not a part of the surgical urethra. That begins at the posterior portion of the fossa glandis, and is marked at its beginning by a slight narrowing of the canal, which is physiological. From that point backward there is, in the normal condition, no change in the calibre, until the bulbus urethræ is reached; at that point a shallow depression is found, especially in old persons, the fossa bulbi, into which the mouths of the glands of Cowper (Méry's glands) open.

One and a half inches (4 cm.) from the meatus, on the upper wall of the fossa glandis, with the opening directed forward, is a follicle, the follicle of Morgagni, which is from 4 to 10 mm. long, and scattered on the floor of the urethra are the opening of numerous follicles, the glands of Littre.

The *membranous urethra* (isthmus urethræ) lies between the two folds of the triangular ligament, and varies from one half to three-fourths of an inch (2 cm.) in length. It is narrower than the penile urethra, being the narrowest portion of the canal next to the meatus (McClellan), but is less dilatable on account of its being enclosed by the fascia perinei propria, and is embraced by the compressor urethræ muscle, which plays a part in the function of ejaculation of the semen. Cowper's glands lie on either side of and below the membranous urethra.

The *prostatic urethra* is that portion of the urethra which stretches from the bladder to the posterior border of the triangular ligament, and is from three-quarters of an inch (2 cm.) to an inch in length (2½ cm.). It is ended by the prostate gland, or, if not completely encircled by this viscus, is for three-quarters of its circumference, especially at its lower rectal portion. On the floor of is a triangular elevation with its base lying

toward the opening of the bladder, its apex forward, three-quarters of an inch (2 cm.) long, the *colliculus seminalis* (*veru montanum seu caput gallinaginis*), and directly in front of this, and extending into its base in the middle line, is a pocket, the *sinus pocularis seu prostaticus*, three-eighths of an inch (1 cm.) in depth, one-twelfth of an inch wide (2 mm.) (McClellan), one-twenty-fourth of an inch (one-half of a line) (Hyrtl) at its orifice, and one-sixth of an inch (4 mm.) at its base. The opening is directed forward. This sinus sometimes extends into the lateral lobes of the prostate and is called the *utriculus prostaticus seu uterus masculinus*. Upon each side of this sinus the prostatic ducts open in a crescentic-shaped depression, and the mouths of the ejaculatory ducts open on either side of the orifice of the *sinus pocularis*. The prostatic urethra is wider than the membranous urethra and does not extend backward to the bladder in a funnel-shaped canal, as is often supposed, but narrows evenly throughout (Hyrtl).

To sum up, the male urethra may be considered to have three dilatations and two interlying narrow portions—the dilatations being the *fossa glandis*, the *fossa bulbi*, and the prostatic urethra—the contracted portions, the *pars spongiosa*, from the meatus to the bulb, and the *pars membranosa*. The *bulbus urethræ* lies at the commencement of the *corpus spongiosum*, between the *crura* of the *corpora cavernosa*, as a pear-shaped body.

TESTES.

The testes are two oval, glandular bodies contained in the scrotum, and have two coverings, viz., the *tunica albuginea*, which envelopes the organ closely, the inner layer of which is called the visceral layer, and that again is en-

closed in the tunica vaginalis, which is reflected from the scrotum and is composed of two layers, the inner of which is called the tunica vaginalis propria. They are ovoid in shape, one and a half to two inches long (4 to 5 cm.), one inch broad ($2\frac{1}{2}$ cm.), one and a half inches (4 cm.) in their antero-posterior diameter, and three-quarters of an inch in thickness (2 cm.). They weigh 6 to 8 drachms (24 to 32 gm.), the left being slightly larger than the right and hanging lower than its fellow (Hyrtl). They are suspended by the spermatic cords, which are attached along the posterior borders of the testes, and when the man is in an erect position they appear as if obliquely placed, with their upper ends diverging and directed forward and outward (McClellan). They are slightly compressed laterally, and are covered, along their posterior border, by the epididymis. These bodies have a firm, resilient feel, but are not indurated.

The testes are divided into septa or trabeculæ, two hundred to four hundred in number (Hyrtl), which start from the tunica albuginea and concentrate in the corpus Highmorianum (mediastinum testis), each septum containing from four to six convoluted lobules (lobuli testis). The diameter of each tube is $\frac{1}{16}$ of a line ($\frac{1}{160}$ inch), and the thickness of each tube wall is $\frac{1}{400}$ of a line ($\frac{1}{800}$ inch) (Hyrtl). Each lobule terminates in a straight tube (vasa recta seu tubuli recti); these unite in the mediastinum to form the rete testis, which at the upper end of the mediastinum testis unite into ten or twelve straight ducts known as the vasa efferentia. These vasa efferentia perforate the tunica albuginea, become enlarged and convoluted, and by their union go to make up the globus major of the epididymis under the name of the coni vasculosi Halleri. At the globus major these tubes terminate in a much-convoluted tube one and a half inches (4 cm.) long, as felt through the

scrotum, but when unravelled proves to be a single tube, twenty feet in length (McClellan).

The epididymis is divisible into three parts, viz., a head (globus major), the body, and the tail (globus minor), which latter merges into the vas deferens. At the junction of this latter with the globus minor is a blind tube, the vasculum aberrans of Haller.

Artery.—The spermatic artery arises from the abdominal aorta, passes out of the inguinal ring, and descends in front of the spermatic cord to go to the testis. It sends a branch to the epididymis (the epididymal artery) and then passing through the corpus Highmorianum breaks up into a number of small vessels to be distributed to the septa of the testis and the inner surfaces of the fibrous coat.

Veins.—The veins leave the testis at the corpus Highmorianum together with the veins of the epididymis, the combination of these two sets making the pampiniform plexus, they pass up in front of the vas deferens, and unite in a single efferent trunk which on the right side empties into the inferior vena cava and on the left side into the left renal vein.

Nerves.—These are derived from the spermatic plexus, and also from filaments from the renal, hypogastric, and aortic plexus (McClellan).

VAS DEFERENS.

Beginning at the globus minor, the vas deferens passes out through the abdominal ring down into the basin of the pelvis, passes behind the neck of the bladder, thence upward and slightly backward to the side of this viscus, lying behind the ureter. It joins with the corresponding vesicula seminalis, and indeed this latter organ, although

described in most works of anatomy as a separate viscus, may, and I think should, be regarded as a branch of the vas deferens, or, as Foster says, "composed of coils of the vas deferens somewhat dilated." It joins the duct of the corresponding seminal vesicle to form the ejaculatory duct which conveys the semen from the testis to the prostatic portion of the urethra, opening at the sinus prostaticus. Its total length, when uncoiled, measures two feet (60 cm.) (McClellan). It has a special artery (*arteria vasis deferentis*), derived from the superior vesical artery.

VESICULÆ SEMINALES.

The *vesiculæ seminales* are two branching canals from three to six inches ($7\frac{1}{2}$ to 15 cm.) long and three lines ($\frac{3}{16}$ inch) wide, compressed by connective tissue into two broad bands; when not compressed, they spread out into branching blind sacs. Sometimes they appear as bundles of connective tubes, showing no branching, but lying side by side as sinuses. They are placed on each side of the bladder near the base of this viscus, sloping slightly backward and lying above and behind the prostate. At their inner edge they touch the *vesicula seminalis* of the corresponding side, with which they run parallel for a short distance; thence they pass posteriorly to the rectum, to which they are attached by loose connective tissue, and then downward to unite with the vas deferens, forming the ejaculatory duct, and pierce the prostatic gland in whose substance their lower ends are sunk. The upper lie wider apart than the lower portions, and at their junction with the *vasa deferentia* is found a dilatation known as the *ampulla* (Henle). They are made up of connective tissue, and beneath that are a muscular coat composed of longitudinal circular fibres and a mucous

coat, which is thickly sown with abundant glandular tissue.

Before entering the prostate it joins, as has already been said, with the vas deferens to form one straight tube, the ejaculatory duct, which extends from the junction with the vas deferens to its opening in the colliculus seminalis (*veru montanum*), about three-quarters of an inch (2 cm.) in length (Gray), and three lines ($\frac{3}{12}$ inch) in width at its commencement, contracting at its orifice to one-quarter of a line ($\frac{1}{48}$ inch) (Hyrtil).

PROSTATE.

The prostate is a viscus of firm texture, is composed of glandular and muscular tissue, and is made up of two lobes and a third portion (improperly called a lobe) which unites the two lateral portions (the isthmus of the prostate), being made up principally of fibrous tissue stretching across the prostatic urethra. In addition to this fibrous tissue it is composed of layers of transverse, diagonally striped muscular tissue, connected above with the sphincter of the bladder, below with the compressor urethræ muscle, and is capable, through adduction of the lateral lobes of the prostate, of compressing the neck of the bladder sideways and of closing the bladder voluntarily, independently of the action of the sphincter vesicæ (*adductor prostatæ*) (Kohlrausch). With advancing years it becomes quite large, and prominent, constituting then what is known as the middle or third lobe of the prostate. The prostate attains its full normal evolution at the age of puberty, being in children very small and hardly discernible. There seems to be some close relation between the testes and this viscus, inasmuch as atrophy or loss of the testes is frequently followed by atrophy of the prostate. It is situated about the

neck of the bladder, which it sometimes encircles, and through which the prostatic urethra passes, at the upper portion of the viscus in youth, nearer the posterior portion in old age (Hyrtl). Sometimes, instead of piercing the gland, the urethra furrows the anterior surface of the prostate, lying upon the top of instead of in the body of the organ. If two lines, both starting from the coccyx as a fixed point, were to be drawn, one in its course touching the lower border of the symphysis of the pubes and the other running in a line parallel with the perineum, the prostate would be found lying between the subtended legs of the angle thus formed, its base ten lines, its apex fifteen lines from the inner surface of the symphysis of the pubes. Laterally the prostate borders on the levator ani muscle, which sends bundles of muscular fibres to the upper portion of the viscus. It is held in place by the perineal fascia.

In length it measures one and one-fourth inches (3 cm.), which represents pretty nearly the length of the prostatic urethra. Its transverse measurement at the base is one and one-half inches ($3\frac{1}{2}$ cm.); its vertical measurement one inch ($2\frac{1}{2}$ cm.) (McClellan).

Its average weight is four and one-half to four and three-quarters drachms (between 17 and 18 gm.) (Thompson).

As has already been stated, it is made up of glandular and muscular tissue, the latter forming the bulk of the organ. The glandular tissue is of the racemose variety and is not very abundant. It is principally found in the lateral lobes and not in the isthmus or so-called third lobe (Hyrtl). The ducts of this glandular tissue open into the prostatic urethra on each side of the colliculus seminalis in the form of a crescent with the concavity looking inward. The two ducts nearest the colliculus are larger than the others.

The muscular tissue predominates over the glandular in the proportion of three to one (Hyrtl), is of the unstriped variety, and can be distinguished from the glandular tissue in that the latter is yellow and the former is pink. On the floor of the prostatic urethra is a sinus, the sinus pocularis, which has already been described when speaking of the prostatic urethra. The arteries are principally derived from the vesical, the inferior hemorrhoidal, and the pubic. The veins are large and numerous, and, joining with the veins of the neck of the bladder, form the vesico-prostatic plexus which empties into the internal iliac vein.

The nerves are derived principally from the hypogastric plexus of the sympathetic.

COWPER'S GLANDS.

(Glands of Méry.)

These are two small racemose glands or bodies, the size of a pea (McClellan), situated between the layers of the triangular ligament close to the bulbus urethræ and covered by the compressor urethræ muscle. They open, as has already been said, into the bulbous portion of the urethra, their mouths pointing forward. Hyrtl regards these glands as belonging to the uropoietic and not to the genital system, considering their secretion as designed to protect the urethra against the action of the urine through decomposition or change when a few drops of this fluid are retained after micturition.

GLANDS OF LITTRÉ.

Situated in the submucous tissue of the urethra are numerous small glands, known as the glands of Littré, the mouths of which open on the floor of the urethra.

**PHYSIOLOGY OF THE SEXUAL
ORGANS IN THE MALE.**

CHAPTER II.

PHYSIOLOGY.

THE physiological action of the various organs, the anatomy of which has just been considered, will now be taken up; and, in the first place, let us see what part the penis plays in coitus. Without erection of this organ entrance into the vagina cannot occur, and without intromission sexual intercourse, strictly speaking, is not possible, although vaginal entrance is not necessary for the impregnation of the female.

What, then, are the physiological processes by which erection occurs and the organ is prepared for its share in the copulative act?

Erection is induced by (1) an increased flow of blood to the virile member; (2) by a diminished flow of blood from the organ; or (3) by a combination of both these conditions. The former of these may be induced by stimulation of a nerve centre or centres, whether the same be cerebral or spinal, or by peripheral irritation of a nerve branch; and the latter by compression of the veins of the penis by certain muscles or by mechanical compression from the erection itself (Hyrtl). Lovén states that the principal cause in producing an erection is active dilatation of the arterioles of the cavernous and spongy portions of the penis, and not simply retardation of the flow of blood from the parts. This Eckhard believed to be due to excitation (in the dog) of two nerves (*nervi erigentes*) which rise from the sacral plexus from between the first to the third of the sacral nerves. Stimulation of these

nerves produced erection and ejaculation, while their section was followed by loss of both erection and emission. Eckhard also produced erection by stimulation of the lumbar and cervical portions of the spinal cord, the pons Varolii and the crura cerebri, and he therefore believed that these erigent nerves originated in the cerebrum and passed through the pons and crura to the cord.

These *nervi erigentes*, so named by Eckhard, and apparently adopted by the Germans alone, are really only one, or perhaps two nervous filaments which spring from the sacral plexus of the sympathetic, and supply the bladder, the prostate and the membranous portion of the urethra. Irritation of the peripheral ends of these nerves produces erection by inducing dilatation of the large arteries supplying the penis, and Eckhard, in 1863, considered that they were vasodilator nerves. Lovén, in 1866, showed that the irritation of these *nervi erigentes* produces dilatation not only of the large arteries which supply the penis, but also of the delicate twigs which ramify in the corpora cavernosa, and he considered that their action was to dilate the arteries and to permit the blood to circulate freely through the trabeculæ of the corpora cavernosa.

Eckhard, in continuing his experiments, believed that if the *nervus pudendus* was irritated the *nervi erigentes* would also become irritated, and that an erection would ensue. This he proved by experiment, by irritating the prepuce of a dog, and he, moreover, found that if the *nervus pudendus* was cut no erection would ensue, and this was confirmed also by Gunther's experiments on stallions.

Budge, by electrical irritation of the *pedunculi cerebri* in a rabbit, produced erection and emission. Eckhard repeated Budge's experiment, and furthermore showed that irritation of the pons Varolii and the cervical portions of the spinal cord produced both erection and emission.

Eckhard therefore concluded that the centre of erection resided in the brain; that the nerves presiding over this function passed from the spinal cord down to the sacral portion of the cord, and there emerged as the *nervi erigentes*.

It must be borne in mind by the American reader that these *nervi erigentes* are not distinct nerves, as the *nervus pudendus* is, but merely filaments of the sacral plexus of the sympathetic; probably some branches from the hypogastric plexus of the sympathetic also assist in this function, so that, as matters stand at present, erection seems to be seated in the brain, and in the cervical and sacral portions of the spinal cord.

Goltz, in 1873, proved that erection might take place from irritation of the lumbar and sacral portions of the cord, without any communication existing with the brain, by dividing the spinal cord of a dog at the junction of the dorsal and lumbar portion, and it was found that erection followed on irritating the prepuce, on pressing the belly in the region of the bladder, and on pressure on the bladder through the rectum. It is not stated whether an emission took place also. He furthermore found that erection was produced by electrical irritation of the hind feet.

This point is indirectly proved by Sarbo's case, in which a man fifteen years before his admission to the hospital had injured his spine by a fall. Chronic myelitis ensued, which was characterized by *incontinentia alvi et vesicæ*, with paraplegia and anæsthesia, and total absence of erectile power in the penis. Anæsthesia extended over the mucous membrane of the rectum, perineum, scrotum, and penis. Upon his death the autopsy showed degenerative changes, with loss of nerve substance in the cord from the fifth lumbar to the fourth sacral vertebra, and microscopical examination showed evidences of chronic myelitis.

Nor is this all: cerebral stimulation not infrequently produces partial erection with and without ejaculation of the semen, as is seen in cases of hanging and in deaths from suffocation (Devergie, Orfila, Ollivier, d'Angers). Gould and Pyle give a case in point where an Italian "castrata" is said to have been in the habit of partially hanging himself to get an erection. Lallemand's case of a soldier who, from a fall on the lumbar region, was completely paraplegic, shows that the spine is not the only cause of erection, because, notwithstanding his injury, he had violent and persistent erections with ability to copulate and to masturbate.

I myself believe that erection of the male organ of generation is produced by excitation of both the brain and the spinal cord, but which of the two is the more active agent in the function is not yet determined.

Erection of the penis is also produced by impressions primarily originating outside of the nerve centres or any portion of the nervous system. Thus, dalliance with women, and erotic images, during either waking or sleeping hours, are sufficient to stimulate the sexual appetite and provoke erections with emissions (nocturnal and diurnal emissions), about which I shall speak later; and among other physical causes may be mentioned friction of the genitals, balanitis, hemorrhoids, gonorrhoea during the early and inflammatory stage, stone in the bladder, worms, and a full bladder.

Regarding the purely mechanical aspect of erections, Kölliker and others think it is due to a relaxation of the muscular fibres in the trabeculae of the corpora cavernosa and the corpus spongiosum and in the middle coats of the urethra of these parts, in consequence of which the spongy parts of these organs are filled with blood, as water is by a sponge. The rigidity of the penis occurs

as soon as the muscular fibres are completely relaxed, and the venous sinuses are filled without the return of the blood being impeded or the venous circulation being interfered with. But to that view is the objection that, inasmuch as the veins are larger than the arteries, the blood would be sent out of the penis faster than it was sent to it, *ergo*, there must be some check placed upon the exit of the blood, else no erection would occur. This check is produced by the action of the muscoli bulbo-cavernosi, ischio-cavernosi, and the adductor prostatæ upon the venæ dorsalis et profundæ of the penis; and this point is confirmed by Hunter's experiments on a dog, in which the compression of the vena dorsalis penis produced fulness and extension of the penis (vol. iv., p. 32). The more complete the erection becomes, the more marked is the compression of the veins, and the latter is further completed by mechanical pressure exercised upon them by the turgid virile member. In all this function the so-called erector penis muscle, according to Hyrtl, plays no part in erection, but when erection is complete then the contraction of this muscle draws the penis tightly up against the belly.

Still another theory has been advanced by Kohlrausch which is supported by Hyrtl, to wit, that more stress should be laid upon the twisting of the veins at their points of exit from the corpora cavernosa et spongiosum in their relation to the outgoing veins through the enlargement and change in the shape of the penis, than upon any muscular compression.

All these theories are plausible; all are possible, and it is highly probable that all are concerned in producing that condition of the penis so conducive to pleasure for the male and so necessary for the propagation of the species.

It is a matter of general acceptance that micturition and erection are not possible at the same time, and this physi-

ological fact has an important bearing upon the function of erection and of ejaculation.* The erectile tissue of the bulbus urethræ extends between the muscular tissue and the mucous membrane of the pars membranacea urethræ, and reaches as far backward as the colliculus seminalis. When the erectile tissue of the bulb in common with the erectile tissue of the rest of the sexual organs becomes turgid, the colliculus also becomes swollen with blood, and this increase in size encroaches upon the narrow portion of the prostatic urethra and shuts off the canal from the bladder, thus preventing this latter viscus from emptying itself of its contents. But, in addition, it also prevents the semen from flowing backward into the bladder, directing it forward toward the anterior portions of the urethra, and in this it is assisted by the position of the ejaculatory ducts, which point forward and open in front of the colliculus (Kobelt).

PHYSIOLOGY OF THE TESTES.

The testicles secrete the spermatozoa (Pl. V.), the fructifying principle of the semen, by division and enucleation of the testicular cells, together with a thin alkaline fluid, the *liquor testis*, in which these bodies are conveyed to other portions of the sexual apparatus. The production of spermatozoa probably goes on through the life of the adult male from the age of puberty, 14 (Rüttel, Liégeois), up to quite advanced old age, having been found in the semen of old men, 87 (Curling), 92 (Rüttel), 96 (Casper). As old age advances, although the capacity of secreting spermato-

* Every rule has its exception, and this exception Salzer gives in the case of a man who was afflicted with priapism of seven weeks' duration, in which the urine was passed in jerks with difficulty, and only when the patient was in the knee-and-elbow position. Still this exception does not invalidate the correctness of the statement made above.

zoa still continues, it is very much restricted both as to the amount and to the fruitfulness of the fluid, but exceptions to this will be noted later on. Many observers have examined the seminal fluid of old men who have died in public institutions, and have collated and published the results of their investigations.

Duplay examined 51 cases; in 37 spermatozoa were found; in 14 none were found. Of the 37 fruitful instances, in 26 spermatozoa were found along the entire tract of the seminal passages; in 3 in the vas deferens only; in one instance only were these cellular elements found in both vesiculæ seminales, none being seen in the vas. In 7 cases spermatozoa were found in one vesicula seminalis only (four times in the right, three times in the left). In 7 of these men the semen was found as abundant and apparently as normal as in the average adult.

The ages of these 37 men ranged from 60 to 82, and in the 7 cases mentioned where the semen was so abundant the ages ranged from 73 for the youngest to 82 for the oldest.

Duplay also noted that even if a considerable degree of atrophy existed the testicles could yet secrete spermatozoa, and that this function probably continues up to the time of death.

Dieu also published a series of cases which he had examined. His cases amounted to 105, ranging in men from 64 to 97 years of age. It is noteworthy that one of these old men hanged himself at the age of 84, when an abundant seminal emission took place in which spermatozoa were numerous. In these 105, in 41 only were spermatozoa found in the semen; in 64 they were absent. In 14, between the ages of 64 and 70, 9 showed spermatozoa; 5 showed none. In 49 cases between the ages of 70 and 80, 22 had spermatozoa, 27 showed none. In 38 cases be-

tween the ages of 80 and 90, 10 showed spermatozoa, 28 had none; and finally in 4 cases between the ages of 90 and 97 no spermatozoa were present in the semen.

Simmonds gives the result in 13 old men who were over 70 years of age, whose genital organs he had an opportunity to examine *post-mortem*. The oldest one was 87 years of age, in whom the spermatozoa were very abundant. In 10 of the 13 the spermatozoa were numerous. In 1 (a case of arterio-sclerosis), the man being 76 years of age, azoospermia was present. In 2 cases there was oligospermia.

While from these figures it would seem as though the secretion of spermatozoa may diminish as old age increases, it will be seen that this is not necessarily the case. Hence, we can conclude with Simmonds that even in the most advanced old age spermatozoa are almost constantly found in the semen.

The function of the testicles is seemingly to secrete the fructifying principle of the seminal fluid, and this may go on to old age, but other portions of the sexual apparatus are concerned and assist in making up the semen as we see it in daily life. As bearing upon this point, whether the spermatozoa are secreted solely by the testicles, an interesting case has been reported by Princeteau. Instances are given throughout medical literature where castrates are reported to have become fathers of children, and by castrates I mean men in whom both testes are wanting. In such cases the old adage, that accidents will happen in the best regulated families, occurs at once to our minds, and the belief is strong that the putative fathers were not the real ones. In such reported cases the semen has not been examined microscopically, but in Princeteau's case it apparently was. The case was that of a young man who had lost both testes by ablation for tuberculous disease of these

organs. No trace of either of these bodies could be discovered on palpation. Nevertheless, this young man had frequent erections, indulged in coitus, and ejaculated a fluid which contained spermatozoa, of which Princeteau showed preparations (*dont le présentateur montre des préparations*). How soon after the operation the semen was collected is not stated. This case does not admit of discussion. If there has been no mistake in the report, then we must revise our belief that the testicles are the only organs of the sexual system which secrete spermatozoa. I shall revert to this point again when I come to discuss the subject of cryptorchids under the head of sterility.

PHYSIOLOGY OF THE VESICULÆ SEMINALES.

For a long time it was believed that the vesiculæ seminales acted only as receptacles for the collection of the semen as it was secreted by the testes, and when they filled up that a spasmodic contraction emptied them, producing a seminal emission. John Hunter early called attention to the fact that these bodies were not for the sole purpose of acting as reservoirs for the semen, but stated it as his belief that they were "glands secreting a peculiar mucus." Kayser, in his inaugural dissertation in 1889, reviewed the various experiments and teachings that had been held upon the subject of the physiological importance of the vesiculæ seminales, and he came to the following conclusions, which may be summed up as follows: "The seminal vesicles are organs whose walls secrete an albuminous fluid which is collected in the vesicles themselves. These vesicles serve as receptacles for their own secretion, the physiological importance of which is not yet well known. In the contents of these seminal vesicles spermatozoa are found, sometimes more, sometimes less, but they are never so

regular nor so abundant as to authorize one to say that the seminal vesicles are also storage-places for the spermatozoa."

With this view physiologists of the present day are inclined to agree; and while the vesiculæ seminales do secrete a fluid peculiarly their own, which is one of the principal ingredients or component parts of the semen, they undoubtedly also contain spermatozoa, and it is probable that they also act partially as receptacles for the spermatozoa, for upon this ground only can the statements that castrated men are occasionally fruitful be accounted for, supposing them to be complete castrates, to wit, that spermatozoa have been lodged and detained for a certain length of time in the vesiculæ, to be later on expelled during the act of coition.* The secretion of these bodies is thick, glairy, and albuminous, resembling synovial fluid (Hyrtl); it probably constitutes the bulk of the seminal fluid, and is made up of globular, granular bodies, with or without nuclei, and epithelium, both cylindrical and ciliated. That they are true secreting glands also derives force from the fact that in some animals (the horse, the bear, and others) "in which the vesiculæ seminales are large and of apparently active functions, they do not communicate with the vasa deferentia, but pour their secretions separately, though it may be simultaneously, into the urethra" (Kirke). Furthermore, in castrated men these bodies do not usually atrophy, but go on secreting, and this is probably the reason why such crippled persons are enabled to have sexual desires and erections and to enjoy coitus, as is not infrequently seen in both animals and men. In men spermatozoa are sometimes found in these organs, but they are seen more abundantly in the lower portions of the vasa deferentia than in the vesiculæ.

* This is tenable without regarding them as reservoirs for the semen.

As regards the place which the secretion of these vesicles holds in the sexual economy, the experiments of Steinach and Rehfish are interesting. Steinach's experiments were made upon rats, in whom he extirpated the seminal vesicles. After the wounds of operation had healed up these rats were allowed to cohabit with females of their own species, and there seemed to be no loss of sexual power, so far as coitus was concerned, in these crippled animals as compared with sound ones, but it was found that their power of fecundating the females was very materially diminished. For example: Four rats were the subject of one experiment. They were allowed to cover 14 females. Of these 14 only 5 became with young, and gave birth to 19. Nine females therefore were sterile. In order to make sure that the fault did not lie with the females, these 9 females were put to rats which were not crippled, with the result that they all had young. Now, when it is considered that rats are very prolific and usually have five litters a year, each litter having ten young, it will be seen that these crippled rats were very decidedly handicapped as regards the question of fertility.

Steinach then experimented by extirpating both the prostate and the seminal vesicles, and he found in this series of experiments that the rats were totally incapable of fertilizing. Their copulative power remained good, but they were totally incapable of impregnating any female. Three male rats were experimented on in this case, and the number of females was 12. In all, 42 attempts at impregnation were made, and all of them were unsuccessful. These rats were then killed, and their vasa deferentia were found filled with spermatozoa, so that these rats although sterile were not azoösperrmatic.

Rehfish's experiments were made upon rabbits, the secretion from the seminal vesicles, from the epididymes,

and from the vasa deferentia being used, each one separately, for each separate experiment. Artificial impregnation was attempted upon female rabbits which were in heat, and the result in all of these experiments was negative. In the secretion from all of these parts healthy and viable spermatozoa were found.

These experiments would appear to indicate that the seminal vesicles are not storage-places for the spermatozoa. It is true they are found there, and, I think, more frequently than Kayser is inclined to admit. Simmonds' post-mortem examinations show that pretty clearly, and they also show that the secretion of all of these glands is necessary for the life, the health, and the mobility of the spermatozoa. Besides this, it shows that the secretion from any single one of the sexual organs, or of the organs concerned in the elaboration and manufacture of the semen, is not sufficient to produce impregnation in the female, even though the fluid may be perfectly fruitful and full of spermatozoa. It is necessary that *all* shall be combined in order to produce fertilizing semen. It is furthermore probable that each component part of the semen is kept distinct and apart until at the time of the emission in coitu, when they then become commingled and each one plays its part in rendering the semen fertile, and the absence of any one of them interferes materially with the good health and productiveness of the secretion.

PHYSIOLOGY OF THE VAS DEFERENS.

When discussing the anatomy of the vas deferens, it was suggested that this portion of the sexual apparatus of the male should properly be regarded as a portion of the *iculae seminales*, and its physiological function, so far as is been observed, seems to be akin to that of those

organs. It secretes much the same sort of fluid, and in the vasa deferentia the spermatozoa are not infrequently found, perhaps about as abundantly as they are in the vesiculæ seminales (Davy); more so, according to Kayser. The secretion of these organs, if they are considered as separate from and independent of the vesiculæ seminales, forms one of the constituents of the semen, and cannot be considered, any more than the vesiculæ, as storage-places for the elaborated semen. Indeed, it is an open question whether the testes produce the spermatozoa in greater quantity than is needed for immediate use; it is a matter of everyday experience that if coitus be indulged in frequently and consecutively, the number of spermatozoa diminish and finally disappear entirely, to reappear in increased quantity after the testes have had a period of rest and an opportunity to secrete their peculiar product (Black, Lode).

The only dissentient to this view so far as I know is v. Gyurkovechky, who states that he is convinced from his experience, which he claims to be abundant, that "in persons who are accustomed to frequent indulgence in sexual intercourse, and who have the strength so to indulge, the number of spermatozoa where coitus is frequently repeated is increased instead of being, as stated by the majority of authors, diminished; indeed, after repeated coitus the spermatozoa are found to be abundant, well developed, viable, and capable of great energy of movement. It is difficult to say why this should be so, but perhaps the explanation may be that in the first coitus the spermatozoa which are ejaculated are the poorest ones, which have been retained in the vesiculæ seminales, while subsequent connections bring out the spermatozoa which are lodged in the vasa deferentia, and finally those which are directly secreted by the testes are emitted." This is a very singular theory, albeit an ingenious one, and I should be the

more ready to accept it but for the fact that my own experience, so far as it goes, is decidedly in favor of the views of the older writers. In other words, I find that where coitus is repeated and frequent the spermatozoa diminish in amount, viability, and energy of movement, and a condition of oligospermia ensues, and that rest and abstinence from coitus produce a return to the normal condition with an increase of spermatozoa. *Quot homines, tot sententiæ.*

PHYSIOLOGY OF COWPER'S GLANDS.

Some authors regard these organs as assisting in the elaboration of the semen, the secretion being ordinary mucus (Kölliker), and is thin, transparent, adhesive, and colorless. This I consider doubtful, as the discharge, in health, is not very abundant, and I incline to the view taken by Hyrtl, that their proper function is to provide a lubricating and protecting coating for the urethra.

PHYSIOLOGY OF THE PROSTATE.

As has already been said, the prostate is composed of muscular and glandular tissue, the former predominating in the proportion of 3 to 1 (Hyrtl). Its relation to the testes is close and intimate, for during the period preceding the age of puberty, while the testes are yet undeveloped, the prostate is small and hardly recognizable on examination, but as soon as the testicles become active and commence to assume their functions the prostate gland increases in size and secretes a fluid (the prostatic fluid), which goes to make up one of the constituents of the semen, though by no means as important a constituent as it has been the custom to consider it. When the testes

begin to assume their functional activity it has been seen that the cells proliferate, forming the spermatozoa, and the same thing happens in the prostate—the cells of this organ also proliferate, developing into true glandular or secreting cells, which pour forth a fluid rich in mucin (Griffiths).

The secretion of the prostate is a thin, slightly turbid fluid, with a feebly acid reaction, and contains amyloid bodies of various size, lecithin (Pl. II., Fig. 5), mucin, and epithelial cells (Pl. II., Fig. 4), generally of the cylindrical variety (Pl. II., Fig. 4). Upon drying, or by the addition of a drop of ammonia, peculiar crystals are formed, such as are seen in Plate I., known to the French as Charcot's, and to the Germans as Boettcher's crystals (Pl. I.).* It has the peculiar seminal odor, resembling the smell of fresh chestnut blossoms; it is that portion of the semen which gives this fluid its characteristic odor, and seems to be principally instrumental in producing coagulation of the secretion from the seminal vesicles during the process of ejaculation (Camus and Gley).

The prostate is an accessory gland and acts in concert with the testes, secreting its fluid in unison with the proliferation of the spermatozoa. The functions of both of these organs vary much at different times and with different individuals, according to the drafts made upon them for sexual purposes, and depending on the general as well as the sexual health and vigor of the person. As the prostatic fluid is secreted, it is retained in the tubules of the

* It should be noted in this connection that although Curschmann and others consider that these amyloid bodies are characteristic of the secretion of the prostate, Fürbringer dissents from this view and states that, although they are most frequently due to the prostate, they are also found in the secretion from the urethra and vesical mucous membranes. Whether these crystals (Boettcher's) are peculiar to the prostatic secretion or not, they are not secreted by the testes, as was once believed to be the case, under the name of *Hodenkrystalle*, which are entirely different. (See Pl. V., Fig. 1.)

gland, especially in those tubes nearest the urethra which are the largest, and there it is stored up until there is a demand for its expulsion. This occurs during the sexual act by a contraction which begins at the end of the tubules, of the continuous sheath of non-striped muscular tissue which surrounds each tubule in its entire length; thus practically stripping the tube of its contents (Griffiths). Hence the probable reason for the preponderance of the muscular over the glandular tissue in the organ. When it is expelled into the prostatic portion of the urethra, it there mingles with the liquor testis, which contains the spermatozoa, and also with the secretion of the vesiculæ seminales, which latter is probably the thick, viscid portion of the liquor seminis. As has been stated previously, it is a question whether the secretion of Cowper's glands enters into the composition of semen (Hyrtl). Inasmuch as there is no pouch or receptacle provided for the storing up of the prostatic fluid, it is probable that the secretion of this material goes on slowly and is retained in small quantities, provision being made for ejecting the secreted fluid speedily into the prostatic portion of the urethra.

Another point to be noted as showing the close relation which seems to exist between the testicles and the prostate gland is evidenced by the frequent atrophy of this latter organ if the testes have been removed or if wasting of these bodies occurs, while no such relation exists between the vesiculæ seminales and the testes if either of the two be mutilated or absent.

CHAPTER III.

PHYSIOLOGY OF THE SEXUAL ORGANS IN THE MALE.—*Concluded.*

PHYSIOLOGY OF THE SEMEN.

THIS, as has been said, must be regarded as a composite fluid derived from the several glands or glandular bodies, to wit, the testes, the prostate, the vasa deferentia, and the vesiculæ seminales, perhaps to a slight extent from Cowper's glands. Its principal and most important ingredient is the spermatozoa, the fructifying principle of this secretion, without which the ovum cannot become fecundated, and this view must hold good until irrefragable proof is brought to the contrary, notwithstanding the cases reported of castrates becoming the fathers of legitimate children. It is a whitish, viscid fluid, its thickness varying according to the heavy or light draft made upon the testes in sexual commerce, with a faint, semi-aromatic odor like the smell of chestnut blossoms (v. Gyurkovechky), the seminal odor. Köl liker says it is odorless; in this, however, I do not agree with him. For the rest it is composed of fine granular corpuscles (the seminal granules), albumin, globin, nuclein, leucin, and phosphates, mingled with the secretion of the prostate, the vesiculæ and the vasa deferentia (Foster). Besides this "the spermatozoa are seen to be contained in a considerable quantity of clear fluid, which on the addition of water assumes the form of irregular flakes and shreds. . . . This gelatinizing substance

... has received from Vauquelin the name of spermatin" (Kölliker).

The spermatozoa (Pl. V.) are of cellular origin and are secreted or formed in the epithelium lining the seminiferous tubules (Foster). They are ciliated bodies and are made up of a head, a neck, and a body. The head is a flatly curved oval, 5 mm. long (Foster). From the broad, flat portion springs the neck which is very short, and beyond that stretches the body, which is about 45 to 50 mm. long, and tapers away to a point. In its formation the head is derived from a special cell nucleus, while the body is of cell growth and development. The movements are slow, reckoned at one second for each vibration, the said vibrations taking place from the head to the tail and are similar to the movement of ciliated epithelium (Foster). This is contrary to my experience, for as a rule I have found the movements of the spermatozoa to be rapid, especially if the semen be diluted with a small amount of water, which seems to act as a stimulus to these bodies. When the semen is thick, and if examined immediately after ejaculation, their movements are sluggish, but they speedily become more active. Kölliker states that their movements are rapid. The spermatozoa progress 2 to 3 mm. per minute, and the movements outside the body last for twenty-four to forty-eight hours, while in the uterus they have been known to be active at the end of six or seven days (Foster).

Amount Emitted.—The amount of semen emitted at one ejaculation varies, according to the statements of various authorities, from 0.75 to 6 gm. (12.2 minims to 1.7 drachms: Mantegazza), to 10 or 15 gm. (2.5 to 4 drachms: Utsmann). This latter comes nearer to the mark in my experience. But it must be borne in mind that this varies according to the sexual habit and sexual

power of any given individual, as is instanced in a case given by Ultzmann where the patient, a man of forty, had such an abundant emission that the woman accused him of emptying his bladder *in coitu*. In this instance the amount ejaculated, being repeatedly collected in a condom, was found to average 25 gm. (nearly seven drachms). Liégeois surpasses this large amount, for in one case that he mentions the amount of semen ejaculated at one emission was half a claret wineglass full (33.10 gm.). Of course this condition of things is very exceptional, constituting a true polyspermia. An ordinary man should, however, be able to emit at least two drachms of semen at each normal ejaculation.

Number of Spermatozoa Present in One Emission.—The number of spermatozoa varies very much with each emission. Lode examined four men, respectively A, B, C, and D. A was under examination from March 29th until May 28th inclusive, and fifteen examinations were made. The maximum number of spermatozoa in a single emission was 333,200,000; minimum, 38,800,000. B was under examination from April 8th to April 29th inclusive. Five examinations were made; maximum number, 551,000,000; minimum, 332,880,000. C was under examination from April 5th to May 8th inclusive. Two examinations were made; maximum number, 175,200,000; minimum, 60,700,000. D was only examined once, on the 9th of May, and then there were 190,080,000. Lode, therefore, in consequence of his experiments, considered that the average number of spermatozoa present in a single emission would average 226,257,900.

Guelliot takes as an average the number of spermatozoa present in a single emission, thus making the average larger than does Lode. He puts the number down at 412,500,000; but one thing should be borne in mind,

that only a single examination was made upon one person, in whom the coitus last preceding the examination dated back for sixteen hours. Lode's figures, on the other hand, were taken from an examination of several men at several different times, and, while in one examination the maximum number exceeds Guélliot's figures, the average for all these examinations is much less, is very probably nearer the mark, and is certainly of more value than Guélliot's.

PHYSIOLOGY OF COITUS.

From what has already been said, the first requisite for complete and normal copulation, so far as the male is concerned, is a full and strong erection, the mechanism of which has already been explained. Intromission then occurs by the insertion of the membrum virile within the vagina, and the friction, together with the compression of the penis, which takes place by the vulva and within the vagina, produces the final act which crowns the work, to wit, the emission of the seminal fluid. This function takes place as follows: The entire sexual organs are congested and in a condition of extreme functional activity. The seminal fluid is, by the contraction of the epididymes and of the coni vasculosi, forcibly propelled toward the urethra; the stimulation extends to the vesiculæ seminales, to that portion of the vasa deferentia which lies under the vesiculæ, and to the prostate, which are all irritated into contraction, and the contents of these various organs are forcibly impelled toward the urethra to meet synchronously at the prostatic portion. At this point spasmodic contraction takes place of the sphincter ani externus, the ischio and bulbo-cavernosi muscles assisted by the levator ani, and probably by the muscular fibres of the urethra. The semen is then propelled into the spongy urethra by

rhythmical spasmodic contractions *a tergo*, and the collected fluid, perhaps there meeting with the secretions from the urethral glands, is forced through the meatus to be deposited in the upper portion of the vagina and the cervix uteri, which, in its turn, is elevated and fixed to receive the seminal discharge from the male.

The effect which coitus produces upon the male varies according to the temperament of the individual, but generally speaking the old Latin adage, *Omne animal post coitum triste*, is correct. After the completion of the sexual act the strong healthy male experiences a condition of gentle and pleasing relaxation combined with a sense of comfort and well-being which is in decided contrast with the preceding excitement and nervous stimulation which has taken place, and which has been so classically and graphically described by Roubaud that I cannot do better than to quote his words: "The circulation is accelerated, the arteries beat strongly; the venous blood, arrested in the vessels by muscular contraction, augments the animal heat, and this stagnation, more pronounced in the brain by the contraction of the muscles of the neck and the retraction of the head, determines a momentary cerebral congestion, during the continuance of which the intellectual faculties are held in abeyance. The eyes, markedly injected, become haggard and the sight is dimmed, or else the eyes are spasmodically closed in order to shut out the light. The respiration comes short and quick, being expelled spasmodically, or else is entirely suspended by the convulsive contraction of the larynx, and the breath is ejected in the shape of babbling, incoherent words. The nervous centres, congested as has already been detailed, communicate only vague and confused sensations; motility and sensibility are held in suspension; the limbs are convulsively agitated or else are subject to clonic contrac-

tion; the jaws are firmly set; the teeth are ground one against the other, and in some the erotic delirium is carried to such an extent that the male will even bite the shoulder of the partner of his sexual joys if she has been imprudent enough to expose it." This picture, of which the coloration is perhaps a trifle vivid, is, in the main, correct, but whether the erotic frenzy shall go to the extreme mentioned in Roubaud's text depends upon the nervous condition of the individual person, some men being by nature more amorous than others and more filled with the *gaudium amoris certaminis*. In a few instances I have known a genuine epileptiform seizure to finish the act, and students of history will recall the statement that Mohammed and Napoleon I. were said to have suffered in this way in their sexual experiences.

"How frequently should I indulge in sexual connection?" is a question often asked of the surgeon, and it is as difficult to answer as the query, "How much shall I eat?" The only answer the surgeon can give is: "As much as your appetite dictates that you want without a sense of discomfort or suffering." The sexual and digestive functions vary much in every person. One man eats largely and can digest what he eats, indeed he needs it; another eats very little, and thrives on what he does eat where the first man would starve. So with regard to the sexual appetite. Cases have been reported where the man has indulged in copulation ten to twelve times per night for some while without immediate bad results (Lallemand), but those quoted by Rüttel and Krügelstein quite leave Lallemand's in the shade. Rüttel gives the notes of an old man, one eighty-four and the other eighty-six, first of whom cohabited with his old wife, aged 70, y, three to four times per diem; while the second, eighty-four years old, indulged his sexual powers

"day in and day out six or seven times per diem, and this for three years before his death. Krügelstein's patient, a hale old man of seventy years of age, apparently covered his young wife habitually from ten to twenty times in twenty-four hours ("und seine junge Frau in 24 Stunden, zehn, ja oft zwanzigmal beschlief"). These are extraordinary instances of sexual capacity which, I am perfectly free to confess, I regard with great scepticism. It may be possible for a strong and vigorous male to perform the copulative act four to six times per night occasionally (though even this is not common), but beyond that the number passes from the region of fact into that of fiction. Peyer instances the case of a peasant in the Baden Schwarzwald, aged forty-five years, who assured him that for the first thirteen years of his married life he had exercised his marital rights day in and day out at least once daily. The man was in perfect health and well nourished. As regards the frequency of coitus, perhaps the safest rule to give is, if after the sexual act the person's feeling is one of well-being, of comfort, and general satisfaction, then no injury has been done at least; but if the act is followed by the symptoms described by Humphreys, where the patient, an apparently healthy man of forty-five, suffered from great depression, with staggering gait and partial loss of vision, after each connection with his wife, then he is injuring himself and coitus must be rigidly abstained from (Holmes *). Various authors have attempted to lay down more or less hard-and-fast rules as to the number of

* It is worthy of note that this patient recovered his health after complete castration, living for many years, and firmly convinced that the mutilation to which he submitted had been the means of preserving his visual organs, if not of saving him from general paralysis. For a year he was able to exercise his marital rights, without his wife being aware of any change until he informed her of what he had done, but after a year's time his desire gradually ceased.

times that the sexual act should be performed: twice per night and then not for ten days or a fortnight (Acton); one coitus in eight days (Mohammed); once in ten days (Solon); once in nine days (Zoroaster); twice per week (Haller). This, as can readily be seen, is a pretty wide range, and no physiological average can be struck; hence I think that the rule I have suggested above is as good a one as can be adopted. Indeed, Lallemand puts the matter in a nutshell in saying: "When connection is followed by a joyous feeling, a general sense of well-being, as well as fresh vigor; when the head feels more free and easy, the body more elastic and lighter; when a greater disposition to exercise or to intellectual labor arises, and the genital organs evince an increase of vigor and activity, we may infer that an imperious want has been satisfied within the limits of necessary health. The happy influence which all the organs experience is similar to that which follows the accomplishment of every function necessary to the economy."

Another question which is interesting in this connection is the period during which a man is capable of performing the sexual act. Relatively speaking, its commencement dates from puberty and its termination to old age and that heretofore has generally been regarded as the limit between which the copulative act is possible in man.

Sir Samuel Romilly has remarked, in reference to the retention of the creative power in advanced age, that the liberality of the English law on the subject was excessive; for there is no age from seven upward at which a man has been denied the power of creating children (Taylor).

In taking up first the earliest period in which the capacity of sexual intercourse has been noted, there is

one remarkable instance given by a gentleman who signs his initials "G. H." in *The Medical Times and Gazette* of April 13, 1872. The subject of his communication is a boy six years of age, who had, at the age of four and one-half years, attempted intercourse with his sister, ætat two. In this case the genitals were well formed but they showed nothing extraordinary.

Steckel and Lofton give instances in which the sexual precociousness was as marked. The former gives two histories. In the first case, coitus was exercised between two children, the boy aged about four years, and the girl not far from the same age, and in the second, the boy had intercourse with his sister from his fourth to his seventh year. The latter instances the cases of two negro children, respectively of the ages of four and five years, who were brought to him, both of them affected with gonorrhœa *ex coitu*.

Other cases have been given in which boys from ten to fifteen years of age have been tried for rape. The age of the girls in these instances have been given as three for the youngest and fourteen for the oldest (Taylor). But besides these, there have been some extraordinary instances given of sexual precocity in infants, and without giving those which were mentioned by the older writers, I will give a résumé of three which have been reported within comparatively late times. The first one is that of a boy who, at one and one-half years of age, had arrived at puberty. At two and one-half he was, to all intents and purposes, an adult. His muscular development was great ("he was an exact reproduction of the Farnese Hercules"). He had no beard and no axillary hair, but his pubes and scrotum were thickly covered with black hair. From his first year he had twenty teeth, which were deciduous. The measurements of the penis were as fol-

in the erect position the length was three inches; and erect it was four and one-half. The circumference of the entire organ measured eight inches. Dr. Henry White, who reported the case, says that the measurements made by White tell us that the organ was normal and was in his opinion, perfect. Of course at the time at which this case was reported (1809) no anatomical examinations were yet in their infancy, and it is probable that the seminal fluid was examined at post-mortem and that it yet remains in open question whether the discharge was sterile. Dr. White states that at the age of two years at the end of his second year, the organ was three inches long and the boy was three years old.

The case was not remarkable if anything, was reported by Dr. Henry White. The subject was a boy named King Stone. The subject was born on his fourth year on the 14th of September, 1809. At that time the sexual organs were normal. The organ was covered with a luxuriant growth of dark brown hair. The condition of the organ was extraordinary. The development was extraordinary. The organ was in the same relation to his height as that of a man of six feet in height. The organ was not so marked an organ as that of the lumbar and scrotal regions. The height of the organ was three and one-half inches. The weight of the organ was as large as that of a well-developed organ. It was three and one-half inches long. In the same condition four and one-half inches long. The organ was three and one-half inches long, exhibiting

a perfectly formed glans; the testes were well formed and well developed, being rather under the average size of this organ in the adult. The teeth, which were deciduous, were twenty in number. "His father observed last night, when he slept with him for the first time, constant erection of the penis, accompanied by nickering like an excited stallion," and for these reasons consulted Dr. Stone. "He has never been known to attempt masturbation nor is it known whether he has had sexual relations, although the organ has that appearance. The slightest touch of the penis excites it, and the organ becomes tumid and of the average adult size. The voice is that of puberty and has been that for some time." At birth the boy weighed eleven and one-half pounds. At three years of age he weighed fifty-six pounds. At birth the glans penis was perfectly uncovered, the hair on the pubes was one-half an inch in length, which, at one year of age, was as thick and abundant as it is at present. As regards his seminal secretion. September 13th, but what year I am unable to determine from the records, "he slept with a near relative, a married lady and the mother of several children, who in the middle of the night was aroused by finding the boy tightly clasped to her back and her night-dress saturated. At first she thought that he had emptied his bladder on her, but on carrying her hand to the part she found it was saturated with a *very different and glutinous material* from that she expected." This ejected matter could not be obtained and so no examination was made of this seminal discharge. "I have several times seen him during an attack of nickering and am satisfied that it was produced by a tendency to epilepsy." The boy's age and the date of his birth are both vouched for by the family physician. In the course of the examination, Dr. Stone elicited from the father that this latter also had been sex-

whole body three times each day, which she followed up until a few weeks before she came to town. The child's health became better, or rather he recovered flesh, for although he had got thinner, he had never lost his appetite nor had any other bodily ailment. The emissions were less frequent, rarely more than once a week, but she noticed that if he took more porter or beer than his usual allowance, he generally had an emission the same night; she also states that since the time he has been in town (six weeks), the emissions have been more frequent than for some time previous. . . . Thus far his mother. The rest of the narrative has come under my own observation. . . . He has a fine, high, and spacious forehead, but the occiput is extremely prominent from the enormous size of the cerebellum, which Drs. Gall and Spurzheim state is always the case when the genital organs are developed in a great degree. . . . There is no beard on the chin, but the upper lip is darkened with hair such as is generally noticed in young persons of fifteen or sixteen, and accompanied with inspissation of the sebaceous matter about the alæ of the nose, usually observed at the same period. . . . The penis, scrotum, and testicles are as large as those of the adult, the prepuce being always drawn back, or perhaps it may be said not existing at all; the glans penis is constantly uncovered. The pubes and scrotum are covered with thick, dark, curling hair. . . . The arms are muscular, and the origins and insertions of the muscles admirably marked. . . . But it is the posterior view of the trunk which presents next to the parts of generation the most remarkable appearance. The lumbar mass of muscles is enormous and the trapezius with the latissimus dorsi are not a whit behind them; the muscles of the scapulæ are also very large and prominent; the spine is very erect, and from the nape of the neck to the pelvis he



classed as curiosities in sexual literature, are of interest and importance as showing that it is possible for the sexual functions to become so abnormally developed as to permit of attempts at coitus, or at any rate for the existence of physical conditions which would permit of the exercise of functions at an age when they are supposed to be quiescent. It would be very curious, if it were possible, to follow out the subsequent history of these cases and learn whether, as a compensatory result, these precocious children became impotent at an early age.

The cases which have just been narrated only refer to the question as to the earliest age at which coitus can take place, but it by no means follows that because a given youth has had or has attempted coitus, that he is therefore fruitful. The question then comes up, what is the earliest period at which a youth can become fruitful? I have already given the opinion of Sir Samuel Romilly, but however good law that may be, it is not, physiologically speaking, of any worth. The only trustworthy test is the presence of living spermatozoa in the semen, and the earliest age, so far as I know, at which spermatozoa have been found, is the age of fourteen years (Hofmann and Schlemmer). In Schlemmer's case it should be noted that the spermatozoa were scanty and undeveloped, but in Hofmann's they were well developed, although few. It is probable, however, that both boys were *ad generandum inapti*, and we may therefore consider the earliest period of fecundity in the male as at the age of sixteen (v. Gyurkovechky, Simmonds).

Of course, if we admit those instances where suits have been instituted for seduction, rape, and the like, the age may be reduced. Thus Casper gives an instance in which a boy of thirteen years and ten months was adjudged to be the father of a child for whose maintenance the mother

entered suit, but there is strong suspicion in this case about the justice of the verdict, when we read that the woman who sued in this instance was a notorious prostitute. Casper gives another instance where the boy was fourteen years and two months, and in this case also the woman was a whore. Rüttel also gives a similar example. The character of the plaintiffs in these cases would, however, tend to cast discredit upon the justice of the legal decision, particularly when we reflect that the law is not the perfection of reason, Sir Edward Coke to the contrary notwithstanding.

The youngest age at which fertile coitus is said to have occurred is reported by Klose. He states that a boy of nine years of age impregnated a girl whose age is not stated. In order that there shall be no misunderstanding about this extraordinary statement I shall quote his words: "Mir ist ein Fall bekannt, wo ein Mädchen, aller Wahrscheinlichkeit nach, durch einen nur etwas mehr als neun Jahr alter Knaben geschwangert wurde." *Credat Judæus Apella.*

It would be in the highest degree imprudent to accept as truthful all the curious stories which are published on sexual matters, for there is no class of literature in which the adage, *Omne ignotum pro magnifico*, is more applicable, and the only plan for the surgeon to adopt is to accept only what is proved, or what is so probable as to be very likely true, otherwise he will entangle himself in all sorts of nonsense and complications.

As regards the other side of the question, to wit, how late in life coitus is possible, it may be broadly stated that these functions may, and not infrequently do, last until the grave closes over the earthly as well as the sexual career of the subject. I have already, when speaking of the physiology of the testes, noted cases in which at

eighty, ninety, and even ninety-six years of age, fruitful semen was found in the genital organs of the subjects examined, and while I am fully aware that suspicion, and perhaps properly so, would attach to instances where extraordinary sexual capacity is combined with longevity, yet in some of the cases where it has been claimed that old age does not wither a man's powers of copulation or his fertility, I think we must admit the probable truth of these statements. For example, Burdach mentions a case of a Pole who married his third wife, he being then ninety-three years of age. His last child was born when he was one hundred and three, and the old fellow himself died when he was one hundred and sixty-three. Another instance is also mentioned of a Norwegian, one John Sur-rington, who died at the ripe age of one hundred and sixty, leaving a son aged one hundred and three. His youngest child, however, was only nine, so that this Benjamin was begotten when his father was one hundred and fifty-one years of age (Duplay). Truly there were giants in those days. Krügelstein also quotes a case of one Christian Drächenberg, who died in 1812, aged one hundred and forty-six years. At the ripe age of one hundred and eleven he married for the first time, and one year before his death he married a second time; and Felix Plater instances the case of his uncle, who had a child in his one hundredth year. The case of old John Parr at once occurs to my educated readers as one who has for a long time been held up as an exemplar of the sexual if not of the manly virtues. This old gentleman, if the records of that day are to be trusted, was arrested for bastardy at the age of one hundred and five years, and, unless the whole story is a myth, admitted the soft impeachment, doing public penance therefor in Alberbury church. He married his first wife when he was eighty and his second when he was

orrhoea *ex coitu* at the ripe age of one hundred and three, and in Casper's case of the university beadle, aged seventy-five years, who married, *en secondes nocces*, a young wife thirty-eight years of age, and was blessed with a child one year after marriage; hence it would seem that the grave can be the only limit assignable for the copulative power in the male of the human species. Of course, in citing these instances, it is by no means intended to prove that every old man is necessarily sexually strong; all I claim is, everything being equal, that a man, having lived a decently regular life, and having been careful of his physical health, may enjoy sexual intercourse until the end of his life, no matter how prolonged it may be; but as a matter of fact old men gradually lose their desire and perhaps their capacity for coitus. In these instances Duplay believed, from his anatomical observations on the bodies of aged persons, that the cases of impotency (sterility?) were to be found in the excretory rather than in the secretory apparatus (Taylor), while Schurygin assigns the following reasons why old men should be less vigorous as age advances:

1. Sclerosis and thrombosis of vessels of penis with obliteration.
2. Endarteritis of vessels, large and small.
3. Atrophy of nerves of penis, especially of fine filaments.
4. Fibrous and fatty degeneration of muscular fibres of corpora cavernosa.
5. Degenerative changes in the spinal cord.

MASTURBATION AND ONANISM.

CHAPTER IV.

MASTURBATION AND ONANISM.

STRICTLY speaking, the meaning of the word masturbation is the inciting to and producing of a venereal orgasm by the hand; namely, manual prostitution. By general custom, however, its use has been extended to cover all those cases in which a sexual excitation and orgasm are produced by any mechanical cause, always excepting the physiological one of coitus. The term onanism, first used, I believe, by Tissot as an alternative word for masturbation, I regard as absolutely incorrect. It is supposed to have been derived from Onan, the son of Judah, whose name received this unpleasant and lasting notoriety in consequence of his not completing the sexual act with his sister-in-law in accordance with the commands which were supposed to have been given him to raise up a family to his dead brother. Upon reference to the thirteenth chapter of Genesis and the ninth verse, it will be seen that he went in to his sister-in-law Tamar, and spilled his seed upon the ground. The phraseology in the biblical account is, I admit, vague, but the words, "going in to a woman," in scriptural parlance, mean sexual intercourse with her, and I believe Onan's crime to have been not one of masturbation, but of withdrawal at the critical moment when the orgasm occurred, because the child which might be born would not be his own, but would belong, according to the social customs of the time, to his brother. In this work, therefore, I shall treat of the two as separate matters, and shall confine the use of the word

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In order to study the history and consequences of this habit, I shall divide the subject into the three following heads :

Masturbation in Infancy,

Masturbation in Childhood and Youth,

Masturbation in Adult Life,

inasmuch as the causes, symptoms, and effects vary much, according to the stage of life in which this habit is indulged.

MASTURBATION IN INFANCY.

Etiology.—The causes of this habit in young children, and particularly in infants at the breast or in the cradle, are probably due to some irritation, either of the sexual organs, the genito-urinary tract, or of the rectum, and the two most fruitful sources of trouble in this class of subjects I believe to be the presence of ascarides and of phimosis, especially if this latter be tight and, as not infrequently is the case, adherent. These two conditions produce reflex irritation, which is shown by frequent erections and constant rubbing of the genitals by the infant, either between his crossed thighs, or by turning over on his belly and exercising friction against the bedding or his nurse's body. This goes on under conditions of intense excitement, the child becomes almost purple in the face, which is bathed in sweat, the respiration becomes short, sharp, and labored, and the performance ends in a chronic spasm with extreme pallor of the face, in opisthotonos with or without a cry, in fixation of the eyes with partial closure of the eyelids and a rolling up of the eyeballs; in fact, all the symptoms of a convulsive attack. This performance may end with a discharge from the urethra of a clear tenacious fluid supposed to be mucus (Taliaferro), or of a limpid mucus (Miller). In Taliaferro's and Miller's cases the

infants were less than a year old. The erection subsides and the child from exhaustion falls into a sleep. Some writers (Lallemand, Acton, Howe) have stated that the habit has been induced by nurses who find titillation of the genital organs an easy and ready method of quieting querulous and crying babies. I think this is quite possible, but my own experience in this line has not been sufficient to enable me to state positively that I regard this as a very frequent cause of the habit in infants.

Age.—As stated above, masturbation may be practised by infants at the breast, and the youngest recorded instances that I have been able to find of masturbation in infancy are given by Heckford of a boy three months old, by Van Bambecke of a boy ten months old, and of two girl babies twenty months of age. In White's case (see p. 54) the child was twenty-four months old when it began to masturbate; so that no age may be considered too young for the indulgence of this habit.

MASTURBATION IN CHILDHOOD AND YOUTH.

As the child grows up, between the ages of five and twenty years, the habit is much more likely to become confirmed and to be practised not only frequently, but oftentimes intemperately. Indeed, if we may believe the older writers, it has been performed in one instance (a child of twelve years) as often as fifteen times in an hour (Lallemand). If this statement be true, the child's whole hour must have been occupied in masturbation, and this I am inclined to doubt, for I do not believe any child's muscular strength or its nervous force would be equal to such a strain. It is much to be regretted that a great deal which is not only wildly improbable, but is absolutely impossible, should appear in the works of respectable writers

when treating of this subject. The consequences of this evil habit are bad enough when it is carried to excess, without resorting to extreme exaggeration.

Masturbation may also be indulged in *during sleep*, as is instanced by Hirschsprung in the case of two boys, respectively aged two and three years, who masturbated during sleep with ardor ("eifrig") in consequence of a chronic urticaria.

Etiology.—The causes which induce the habit at this period of life are manifold, and I find the two most frequent in my experience to be that of *example* by playmates and friends, and by the *perusal* and *inspection* of *indecent books* and *pictures*. In addition to these causes, some children seem to be sexually precocious, and take delight, whenever they can get an opportunity, of seeing naked girls and women. Lallemand gives several instances of this, and one is a case in which a lad, six years of age, was so busily occupied in looking up under her clothes at the naked legs of a washerwoman who was engaged in the pursuit of her vocation, as is common in France, on the border of a river, that approaching too near the brink he tumbled in and would certainly have been drowned but for the timely interference of the woman, the contemplation of whose legs had come so near ending the life of this precocious brat. Such instances I believe not are common, but they do occur, and in this connection it must also be remembered that the nervous system and the sexual proclivities of children have a great deal to do with this question of masturbation. Some youths, especially those who are brought up in a sedentary mode of life, are particularly prone to be troubled with vague sexual desires and sexual longings which find morbid gratification in looking at, and oftentimes in manipulating, their own and their playmates' persons of the opposite sex.

The different methods mentioned by writers upon this subject, whereby masturbation is accomplished other than by the hand, are from *friction* of the *genitals* against the *clothing*, between the *thighs* and against the *body*. Vecki states that this may come about accidentally and without any intention of indulging in the habit, and cites the case of a youth, sixteen years of age, who was in the habit, while studying, of lying upon his belly. One day, being stretched upon three chairs busily occupied in reading and unconscious of an erection of the penis, he suddenly found his clothing and body wet, which he at first thought was due to urination. It was, however, an emission, which had occurred without any voluntary effort on the boy's part and due perhaps to some slight movement of his body made unwittingly during the act of reading. The act may also be performed by mutual action between playmates and companions, and some authors state that it not infrequently takes place between man and wife, with the object of producing sexual gratification without the penalty of an increase in family (Vecki, Peyer). In the United States, I believe, this is very exceptional, and I do not remember in my experience to have been told of any such action, although not infrequently married men will practise masturbation, particularly if they are prevented from having sexual intercourse with their wives, from any cause whatsoever.

Titillation and stroking of the perineum, *excitation* by means of a *penholder* and gum elastic *catheter* intra urethram, irritation of the *prostatic urethra per anum*, the *insertion* of a *foreign body* into the *rectum*, simple contact with women without any sexual relation, as, for instance, in cars and public conveyances, and sometimes merely thinking about sexual connection, have been sufficient causes for producing the sexual orgasm (Peyer, Hammond).

eight of the glands of Littré were grouped together with patulous mouths. The lacuna of Morgagni was well marked. The entire mucous membrane had the character of a highly developed irritation, such as is found among people who are either given over to great sexual excess, or who masturbate ardently.

"After the examination was finished I told the patient very plainly that the examination of his canal showed that for many years he had been in the habit of masturbating, and that this agreeable cure by the use of sounds was nothing more than a continuation of his habit and was injurious to him. He at first became highly offended and attempted to deny it, but he gradually calmed down, finally admitted the truth of my statement, and gave me the following history:

"He began the habit at so early an age of life that he could not remember the time at which he did not masturbate. When he went into the gymnasium,* at ten years of age, he gave up the habit for a few months, but began it again very soon afterward. He continued the habit ardently at one time, and that was when he was studying Greek, a study which was exceedingly tedious and disagreeable to him. So intimately are all Grecian matters connected with this habit that it is simply necessary to use the word Greek or Grecian in his presence for his mind to immediately refer to his habit of masturbation, and oftentimes with an almost irresistible impulse to carry his thought into practice. A few years ago he got hold of a popular book which enlightened people as to the way of carrying on this habit by the introduction of foreign bodies into the urethra. At once this struck him as a good idea, and he immediately went to work to put it into execution, and for several months he labored at it, but he

* *Anglice* : Grammar school.

pars posterior urethræ, the entire appearance of the patient's face changed and there spread over his countenance a look of gratified lust and well-being; in other words the passage of the sound had undoubtedly caused a sensation of sexual pleasure, and the act was nothing more nor less than that of masturbation. Kreps was naturally very much astonished, and the next time the patient instead of passing the sound he told him that it was necessary to examine his urethra endoscopically with electric light. The patient was very much distressed at learning this and objected strongly, but Kreps, firm, and willy-nilly, the patient was examined with the endoscope with the following result:

No. 25 tube (presumably French, F.R.S.) passed, the examination being made without cocaine. The introduction of the instrument through the pars posterior occasioned hardly any pain, and the patient presented a totally different appearance from what he had when the sounds were passed, having a rather anxious expression, his eyes were open. The first thing to be observed on examination was the decidedly enlarged and inflamed urethralis; it took up the entire lumen of the endoscope, overlapped the borders of the endoscopic field, and had a red color; it possessed well-marked longitudinal striae; the prostaticus was well marked and was of a darker color; the ejaculatory ducts were also clearly visible, their mouths were also surrounded with a dark red color; the urethral branacea was of a dark red color, and the mucous membrane folds. The pars anterior was almost devoid of its shiny look, and the entire urethra was of a dull appearance. The epithelium had lost its transparency; there was no evident inflammation, no squamation nor of infiltration.

inflammation of the bladder, a rigid foreskin, intestinal worms, constipation, and, possibly, food and drink, constipation, and, possibly, food and drink, tight and ill-fitting clothing, and, possibly, food and drink, tight and ill-fitting clothing, and, possibly, food and drink, tight and ill-fitting clothing, have been suggested as causes for the induction of this habit, the first two being not infrequent causes from the sense of relief when the swelling and rubbing of the sexual organs produced without there being, from originally any desire for coitus, a restraining. This habit, if long indulged in, produces various conditions which tend to keep up the habit, so that a vicious circle is established, the masturbation keeping up the irritation and the irritation inducing a continued habit of masturbation. It is in these young subjects that the most pronounced evil effects of the habit are discernible.

Unusually, but rarely, I believe, in this country, children have been taught the vice by adults, and particularly in the tenement-house districts and places where many women and children herd together and where it would be a great wonder if children did not learn a great deal about things that they ought to know nothing of. Sometimes parents have unwittingly been the cause of inducing this habit in children, by calling the child's attention to its genitals while dressing or washing or by moving back the foreskin, thus inducing more or less irritation in the genitals, and by such irritation laying the foundation for its evil by masturbation. Veckl states that the scholastic instruction in classical literature of an earlier age, as it has been, one of the causes of inducing this habit. It is possible that such may be the case, but I myself should be strongly inclined to doubt it.

It has been claimed that punishment of a child by slapping or flogging has sometimes induced the habit; but at the present day, such a method of correction is, in this

country at least, I think, very infrequent. It will be remembered that Rousseau, in his "*Confessions*," says pretty plainly that pleasurable desires were produced in him whenever he was thus corrected by his female teacher, Mademoiselle Lamercier; but he very naively admits that when a similar correction was administered by her brother these pleasurable sensations were entirely wanting, and I incline to the belief that young Rousseau's sexual desires were aroused more from contact with the body of his female teacher than by the spanking which he got. Peyer, however, says that he has seen cases in his experience, where flogging on the nates has laid the foundation for masturbating habits and warns against this method of punishment.

Lazy and indolent habits, lolling in bed after the child is fairly awake, are also exciting causes toward erection and masturbation. It is well that children who are suspected of this habit should be obliged to get out of bed as soon as they are awake. Irritation of the genitals or any skin eruption about them, such as eczema, prurigo, or, as sometimes happens, phthiriasis, may lay the foundation of the habit, and we must also bear well in mind the fact that congenital tendencies, especially in infants and children, are sometimes to blame for the commencement of this habit.

In speaking of children (p. 71) I mentioned the fact that masturbation might take place in a somnambulistic condition, and the same is true of the young adult. Many years ago, during my association with the late Dr. Bumstead, I saw with him a young lawyer who was in the habit of masturbating during sleep, in an entirely unconscious condition, waking up only at the time of the emission. His case I refer to more in extenso upon page so I shall say nothing more about it here.

site. He has lost his healthy, blooming appearance; he drags his limbs about as if they were too heavy for his muscles; he shuns physical exercise or association with his playmates; he is irritable, peevish, stupid and unable to apply himself either to his studies or amusements, and is the cause of much solicitude and anxiety to his parents, who wonder what can have come over their boy to have changed him so much. If the habit has been intemperately and continuously indulged in, the nervous symptoms may go on so far as to produce epileptic attacks or, if not carried to such an extent, attacks of vertigo, fainting, and dyspnœa, which induce the belief in some deep-seated organic lesion, either of the heart, lungs, or brain. The sexual organs, at first in a more or less condition of priapism, gradually lose their power of complete erection, becoming exceedingly irritable, so that the slightest friction, even that against the clothing, is sufficient to induce the discharge of a thin watery fluid, not seminal in its strictest sense, but probably a secretion from the irritated and inflamed glands of Cowper or of Littré, leading ultimately to spermatorrhœa as adult life is reached. This condition of irritability increases and is accompanied by inflammation of the deeper part of the urethra, inducing a tendency to frequent micturition, which is sometimes involuntary, especially at night, although occasionally diurnal enuresis takes place.

Joal, Peyer, Morgan, and Rendu mention *epistaxis* as a symptom which occurs in masturbators, whether children or young adults arrived at the age of puberty. In my experience I have never seen this symptom, and am strongly inclined to doubt its direct connection with the habit.

Nyctopia, amaurosis, and deafness have also been ascribed to the indulgence in this habit of masturbation (Johnson). In addition to these conditions of the eye a

sensation of weight, of pain in the lids as well as in the globe, spasmodic contraction of the palpebræ, *photophobia*, *photopsia*, together with a condition of *neurasthenic asthenopia*, chronic catarrhal *conjunctivitis* with an impairment of the power of accommodation, together with *hyperæsthesia of hearing* (Löwenfeld, Landersberg) are considered to be induced by this habit. Deneffe gives an instance where derangement of vision was associated with *atrophy of the optic nerve*, and visual weakness.

It would seem as though there were no disease which this gruesome practice may not give rise to, for Marjolin expresses his firm belief that masturbation is a fruitful source of *Pott's disease* of the spine, stating that children affected with this form of disease abandon themselves to masturbation "with a species of fury." But it would seem as though Pott's disease might be the origin of the habit of self-pollution instead of its result, for he furthermore writes that the development of a precocious sexual passion as shown by masturbators is especially noticeable in children who suffer from Pott's disease of the spine.

Phthisis has also been laid at the door of masturbation. In a paper read before the Medico-Chirurgical Society, Dr. Smith stated that out of one thousand phthisical persons, 11.6 had committed sexual excesses, 18.2 had been addicted to masturbation, and twenty-two per cent. had suffered from nocturnal emissions. This is a fair exemplification of the use to which figures are put to support a theory. Of the eleven per cent. of persons who had suffered from sexual excesses had any masturbated; if so, how many? The same might be asked of the twenty-two per cent. who had suffered from nocturnal emissions. The probability is that some, if not all of them, had masturbated, and if so the percentage of masturbators would be increased, and it would also be pertinent to ask which

influence was the greatest in producing the phthisis: the sexual excess or the masturbating? It would be interesting also to know how many, if any, of these phthisical subjects had tubercular disease of the generative organs; of the testes, the vesiculæ seminales, the vasa deferentia, or of the prostate? Is it not possible that disease of these organs may have been the starting point of the vicious habits, instead of vice versa? There is nothing in Dr. Smith's statistics to disprove this view. The "post hoc ergo propter hoc" mode of reasoning is a dangerous one, and leads to such improbable and wild statements as are to be found in Howe's work, where he boldly proclaims that "I (Howe) have for many years made it a practice to get at the history of the parents of consumptive children, and my examinations so invariably confirm my suspicions that I have now no doubt whatever of the direct relation between masturbation and hereditary phthisis." In this Howe goes a step beyond Smith; the latter only claims that masturbation induces *phthisis* in the *masturbator*, but Howe says not only does the *masturbator become phthisical*, but he transmits *phthisis* to his children as a consequence of his vicious habit.

Notwithstanding these statements, I do not think any proof exists which shows a direct connection between masturbation and phthisis. That, given a person who is of debilitated constitution and perhaps with an inherited tendency to phthisis, such a one may by intemperate and exhausting masturbation develop tuberculosis of any organ of the body, I can readily conceive, but that is very different from saying that X—— masturbates and has phthisis, ergo X——'s masturbating habits caused the phthisis.

The same is true with regard to *cardiac disease* in this class of cases. In children and young adolescents one of the principal symptoms is chlorosis, and this is frequently

the urethra be examined under these circumstances by the endoscope, the mucous membrane about the colliculus seminalis instead of being of its normal bright hue is seen to be of a purple color, deeply congested, puffy, and bleeds readily upon being touched with a tampon of cotton. The examination is attended with exquisite pain, and the patient often complains of a sensation as though he were going to have an emission. In marked cases this congestion extends along the prostatic urethra and sometimes, but rarely, invades the portion of the canal about the bulbus urethræ and even a little anterior to that point. In these cases also the patient is exceedingly alarmed by what he considers to be *spermatozoa in the urine*, and upon examination numerous shreds of varying size are found floating about in the secretion from the kidneys. These shreds, viewed under the microscope, are found to be portions of mucous membrane which have been stripped from the urethra, and of coagulated mucus, probably from the glandular portion of the prostate and from Cowper's glands. They are very similar to what is seen in cases of chronic urethritis and which have been called by the German writers "tripperfäden."

The diagnosis is somewhat difficult to make as to whether these shreds are due to masturbation or to an old clap, because many patients have had, at some time or other in their life, an attack of gonorrhœa, but there are a sufficient number of instances in which the patients, having never had sexual intercourse and never having had a venereal disease, yet show these shreds, and there is no reason why they should not, inasmuch as the filaments result from inflammation and congestion of the mucous membrane of the urethra, and these may occur from any irritation, whether of venereal or non-venereal origin.

Besides these shreds there are various little shining

accompanied by a *bruit de diable* which is purely a functional disturbance. The nervous exhaustion following repeated and furious masturbation is often followed by an irregular and enfeebled heart's action, the beats being sometimes greatly increased, sometimes much diminished, but there is no evidence of heart disease (Bachus).

In addition to the constitutional effects already mentioned, there are local ones which should be taken into consideration. In adolescents who habitually masturbate, there is not infrequently an *irritable* condition of the *bladder* and involuntary urination, with oftentimes difficulty in passing water; neuralgia of the *neck of the bladder*, of the *testicles*, and of the *spermatic cord*; a *relaxed* and pendulous condition of the *scrotum*, with abnormal perspiration of the genitals, *varicocele*, and a sense of discomfort in the entire organ. Some authors speak of the *shrivelled*, dried, and bloodless condition of the *glans penis* which confirmed masturbators, becomes of a bulbous character. This latter symptom, at least in my own experience, is by no means constant nor pathognomonic, and not to be depended upon.

Stricture has also been mentioned by Gross, C. Neffe and others as induced by masturbation, but on this point I differ from my colleagues, if by stricture are to understand a contraction of the urethra from the deposit of organized material beneath the membrane. That an irritable condition of the urethra does occur in cases where masturbation is in excess, and which may at times be so marked as temporarily check the passage of the sound, I admit, but in all such cases my experience has been that the impediment is due to an irritable condition producing spasmodic contraction, which ceases after the passage of sounds after the lapse of

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but who in consequence of contracting masturbating habits, in which he indulged intemperately for about a year, was attacked with paraplegia, characterized by a loss of motion from the waist down, but not of sensation. The muscles of the lower extremities responded to the stimulus of electricity, while tickling of the soles of the feet caused a bending of the toes, but no raising or flexion of the leg.

Insanity is another one of the nervous diseases which have been laid to the door of masturbation, but in this view I cannot agree with Ritchie, Hamilton, Maudsley and other writers who regard insanity as caused by the vice. Spitzka, I think, comes nearer to the mark in saying that "in reality masturbation, although a frequent accompaniment and perhaps a result of hebephrenia, is not its cause, however much this habit may ultimately modify the character of the psychosis." I by no means intend to say that intemperate masturbation may not be followed by nervous symptoms, nor that insanity and masturbation may not occur in the same person; but I very strongly doubt if, in the majority of instances where lunatics and epileptics are given to this habit, masturbation is the real cause of their nervous disorders. I incline to the opinion that they masturbate because they are lunatics, and the habit exercises such an influence over them as to be practically incurable and leads to the sad results which sometimes occur because the persons are mentally weak, but not because of the habit.

Ribbing has collated the statistics of the English hospitals for the three years 1885, 1886, and 1887, and in these three years 41,118 insane patients were admitted into the insane asylums in England. In 526, or about 1.03 per cent. of the inmates, was the insanity considered as due to masturbation.

The same author collated the statistics of the Swedish

is seen in the persons who are self-conscious or who are naturally timid or bashful.

It is pretty generally believed by the laity, and by not a few professional men, that every boy or man who masturbates is on the high road to the devil. I by no means agree with this opinion. There are many instances recorded where the habit has been prolonged and no injury whatever has resulted, a case in point being given by Curschmann, where a young and apparently well-known writer of his acquaintance masturbated steadily and vigorously from his ninth to his twentieth year, without suffering either in his physical or his intellectual health. Fürbringer gives a similar instance in the person of a "Do-cent" of his acquaintance, who was of middle age, and who had kept up this practice even since marriage, without detriment either to his physical or mental well-being, and McClanahan gives the record of twelve cases, the life histories of which he had been able to follow up from their youth (many of them up to middle life), where it is curious to note how little influence for good or bad this habit played in their future welfare. Many of the men became well known and to a certain degree locally distinguished in their various walks in life; and as bearing on this question as to how much or little injury is done by this practice, Peyer gives a curious history of a subject who, having been given over body and soul to this habit, broke it off. As frequently happens in these cases, nocturnal emissions followed as a sort of compensation, and Peyer states on the authority of the patient that whereas masturbation produced a sense of comfortable well-being, his nocturnal emissions gave rise to a great deal of mental and physical disturbance, much more than anything he had ever experienced from his habit of masturbation.

Rohleder also furnishes a case personal to himself, of

seen in masturbators. This melancholia may be associated with ideas of suicide or self-mutilation, but my experience has been that such accidents are exceedingly rare in this class of subjects, as they have neither strength of will nor pluck, and much as they may talk about killing or injuring themselves, they almost invariably fail to do so from want of courage.

Dementia has also been spoken of as one of the results of this practice (Bauer), but in studying Bauer's case I am exceedingly doubtful if the masturbation was the cause of the patient's dementia. The youth, aged twenty, was so dull and stupid as to be a semi-idiot, and it is highly probable that the habit did not conduce to quickening or brightening his intellect, I cannot believe the report of the case that there is anything to be had to do with his lack of wits. I am therefore inclined to believe that his vicious habit was not the cause.

Besides its effect upon the general nervous system, some writers ascribe localized nervous disturbances to this practice (Löwenfeld et alii). We have been said to be due to the influence of masturbation, but such a statement needs further confirmation.

At one time great stress was laid upon the *masturbator's face*. This was supposed to be characterized by the sunken eye, the haggard, long, cadaverous countenance, by inability to look in the face when addressing them, by the sidelong glance of the eyes, and by looking at the ground when speaking to people. These features are of no value. I have had patients who looked in the face while detailing their misdeeds, and the same aversion to looking one fairly in the face may arise from other causes.

the habit has been contracted, as it sometimes is, by carelessness and in consequence of bad habits. I believe that in the larger number of cases masturbation and spermatorrhœa should be regarded as symptoms of a disease having many and various causes, rather than as distinct diseases, and it will of course present a great deal of difference with regard to the treatment, whether these symptoms are based upon physical or moral causes.

MASTURBATION IN ADULT LIFE.

Last to be considered are those subjects who masturbate after the age of puberty is passed, and when they have arrived at adult life, and who perform the act either when they are married or, as not infrequently happens, as bachelors or as widowers, being restrained from seeking sexual gratification by illicit connection from a moral sense of wrongdoing or from fear of contracting a venereal disease.

In these instances the bad results of the habit are much less noteworthy than they are where masturbation is indulged in during youth or early adult life; first, because the physical and mental conditions of the patient are much better calculated to withstand the effects of the habit, and secondly, because these subjects do not perform the habit so intemperately nor so frequently, indulging only so far as it is necessary to relieve the urgent needs of their sexual organs. Such men usually masturbate no more frequently than they would practise sexual intercourse in ordinary married life. Under such conditions, the results, so far as my experience goes, seem to be but little, if at all, different from what they would be if coitus were indulged in. In this opinion I am aware that I am at variance with many of my colleagues who regard the ef-

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physical condition of the patient is not sufficiently strong nor well enough established to resist and to overcome the nervous exhaustion which follows; two, because from the fatal facility with which the act may be performed, the continuous practice produces a continuous exhaustion and the victims have no time to rally between the performance of each individual act; and three, because the feeling of disgust and fright which has been induced in the patient by the lurid pictures drawn by well-meaning but injudicious friends and relatives tends to beget a nervous depression and hypochondria out of all proportion to the real injury done by the habit. This is well exemplified by the paper of McClanahan, and one case he relates is such a good illustration of my point that I shall give it in the doctor's own language:

"D. E—, aged fifty years, about five feet eight inches tall; hair gray; refined in appearance and agreeable in manner. During the whole period of adolescence and early manhood he masturbated habitually, usually several times a week, and often several times in one night. His parents learned of his habit, and, with the kindest intentions, did more harm than good by their efforts to stop it. The consequences of self-abuse were pictured to the boy in the most appalling colors. His soul recoiled in horror from the fate that was said to be in store for him unless he discontinued his habit—nay, he was made to believe that his filthy habit had already rendered him unfit for human companionship. In one moment of despair the light of his life went out. Henceforth his most resolute and continuous efforts were directed to the conquering of his habit, but he would grow weary of the gloomy struggle; from sheer exhaustion his vigilance would relax; and the pruriency of his nature, which had apparently only been husbanded by repression, would break forth with an imperiousness which

he was powerless to resist. A wave of passion would sweep over him, which, gathering fury with its progress, would make his blood boil and seethe with sensuality till the complete act of masturbation had given him relief. Then he was plunged into the depths of despair and degradation till the inevitable temptation came again. Feeling its approach he would kneel at his bedside, and, with tears streaming down his face and sobs breaking his voice, would pray to God to help him overcome his hideous habit; and he would then go to bed and masturbate without delay.

"Believing at last that his soul was lost, he left off praying, and believing that his manhood was lost he refused to think of marriage. One night, being partly intoxicated, he stayed till morning with an amorous widow and surprised both himself and the widow with his copulative powers, which had been tried but once before, and that time without success. Perceiving that his opinion of himself was without foundation, he went into the society of refined women, and many years ago he married a charming woman, with whom he has lived happily ever since, and by whom he has had two healthy children. D. E—— is one of the most brilliant writers connected with journalism."

Before leaving this case the chief points are worth reviewing. Here we find a youth given over to a bad habit, which apparently does him no harm. He is warned and admonished with the kindest of motives, but his friends over-do the business, and frighten him so that a mental disturbance bordering almost upon melancholia is produced. This continues without any cessation of his bad habit, which he seems to be utterly incapable of giving up, and he finally comes to regard himself as a pariah and an outcast, a thing accursed of God and man. Remember this is no fancy picture; it is a statement of facts made

by a reputable physician. He makes another false step, but fortunately for him a false step in the right direction. He gets half drunk, and in that condition, oblivious of the past, he exercises his sexual powers, which to his great astonishment he finds to be good; in other words, his second folly teaches him that the consequences of his first folly were grossly exaggerated, and that statements made to him were untrue. This knowledge puts new life into him, and apparently he becomes a sound man. Now suppose he had not encountered this "amorous widow," with the attendant consequences; he would perhaps have gone on from bad to worse, possibly have wound up in a lunatic asylum, and everybody would have at once said, "Oh, yes; another victim of masturbation!" when he really would have been the victim of the folly of his friends.

I know it is exceedingly hard to tell how far admonition shall go, but it certainly never ought to go to the point of thoroughly frightening the patient, for there is nothing that will destroy a man's morale and pluck more than the false and fabulous stories which are told as the consequence of this habit, and it is upon that knowledge that the circulars of the charlatan and the advertising black-guard are cunningly and shrewdly based. As I have already stated, I am no apologist for the habit; but as this book is written for medical men, I think it well that medical men should be told the truth, a truth which I believe most of them are now beginning to recognize, but which in this country at least has never been frankly and formally declared.

My experience does not agree with those writers who state that the act may be committed repeatedly in the course of a day for any great length of time, apart from the insane. It is very exceptional indeed that patients admit to me that they have abused themselves six or seven

times in the course of a day, and cases where the act has been repeated twelve, fifteen, or twenty times per diem I candidly admit I have never seen. In those instances where the act has been of frequent occurrence, there has been some brain or spinal lesion, or else some mental disturbance at the time, and we must be careful to distinguish, in these cases of masturbation, between those instances where the habit results from a reflex irritation of the genital organs, and those where it is derived from some lesion of the nervous system, be it of the brain or spinal cord. Alienists and neurologists claim that epilepsy, tabes dorsalis, and insanity result from masturbation, and it is possible that, in a few instances, these diseases do occur.* Epilepsy, I believe, may occasionally result from intemperate masturbation, but with regard to the other two diseases I am inclined to think that the patients masturbate because they are lunatics or are nervously deranged, and that their nervous derangements have not followed as a consequence of their masturbation. Some patients have an hereditary tendency toward nervous and mental disorders, and it is in these cases I believe that we find the worst results from masturbation. It is the hereditarily weak-minded and neurotic condition of these patients that renders them particularly prone to the evil effects resulting from this habit, but in the ordinarily sound and healthy young adult, I believe the habit is attended, as a rule, with very slight, if any, permanently bad effects, even where it has been long continued, and when we take into consideration the probable number of masturbators, for I believe that eighty per cent., and perhaps more, of young adults at some time or other in their lives have indulged in this habit,† and when we note how little evil follows, even admitting all the cases of insanity and epi-

* *Vide ante*, p. 86. † *Vide ante*; Palmer, Schmuckler, p.

lepsy which are claimed as being due to this cause, I think we are warranted in saying that a great deal of the evil results ascribed to this habit are exaggerated and overdrawn. There is nothing which frightens a man more than belief in a derangement of his sexual organs, particularly if he gets it into his head that he is subject to seminal losses, or if he thinks he is sexually impotent, and the perusal of literature upon this subject, and the gossip and tattle which goes on among men upon this topic, produce a mental disturbance which is of far more consequence than the physical results derived from their bad habit, and a large proportion of patients who consult the surgeon for treatment are really more hypochondriacs than sexual cripples. They dwell continually upon the condition of their sexual organs. Every little irritation, every slight discharge, some of them perfectly normal; every little secretion that passes from them in stool or even in urination, causes them immediate and intense alarm, and by continually dwelling upon the subject, produces a condition of nervous irritation which prevents them from thinking of anything else and precludes them from pursuing their daily occupations with the ordinary zest and vigor with which they have been accustomed to perform their duties.

Undoubtedly in many of these cases there is some underlying reason, either an irritation of the genito-urinary tract, or some other of the many causes which have been enumerated as inducing this habit; but were it not for the mental disturbance which has been produced upon these patients, the physical causes would probably play but a very small part.

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of their filthy habit. Children, where the practice has been contracted either by example or from that spirit of imitation which is common among human beings as well as other animals, can generally be prevented from continuing the habit by friendly words of admonition and warning given by the physician and enforced, if necessary, by the parents, and in addition the parents should be told to watch the child carefully so as to check any tendency toward its recurrence, without continually directing the child's attention toward its genitals, and above all any movements which the child makes toward handling its sexual organs should be severely and immediately checked. This means a great deal of trouble and keeping a constant watch over the child, but it is not prudent, nor indeed is it advisable, if the child's bad habits are to be broken up, to delegate this duty to servants who, in the first place, attach but little importance to the necessity of the treatment, and in the next place take but little interest whether the child recovers or not. Of course, the surgeon will carefully search for any of the mechanical causes which can possibly give rise to the habit, and which have been specified in another portion of this book: examining for the presence of *stone*; spasmodic or irritable *stricture* of the *urethra*; the existence of *worms*; any other rectal irritation, such as *fissure* of the *anus* and *hemorrhoids*; an *inflamed and dirty foreskin*; in short, for any local cause which could induce irritation. The removal of the cause will effect a cure in the majority of cases. This method of treatment, with the addition, if found necessary, of a mild tonic, cold bathing, a proper amount of suitable exercise, and by that I mean exercise in walking, occasional running, fencing, and many of the out-door exercises, will be of service. The forms of exercise which should be interdicted are horseback riding, the use of the

bicycle and climbing, whether of pole, tree, or rope. In patients where a *disease* of the *nervous system* seems to be the starting point of the affection, while not overlooking the importance of local treatment, the nervous malady should be carefully attended to by appropriate remedies, and the boy should be, moreover, stimulated to overcome his bad habit by precept and warning, both by parents and physician. Of the passive varieties of exercise massage is of great value, and by the word massage I mean true massage, not the ridiculous methods of friction and pommelling which are often considered as its equivalent. When properly applied it exercises every muscle operated upon, at a time perhaps when the patient is too exhausted to do much active work; it soothes the nervous irritability and stimulates the functions of the vital organs.

It must be remembered that some of these patients masturbate unconsciously during sleep, and where there is reason to believe or even suspect that this is the case, the patient should be confined in some way, so that he can finger neither his genitals nor any portion of his body to produce an orgasm. The body should also be restrained, for it must be borne in mind that masturbation can be practised without the use of the hands, viz., by rubbing the perineum against the bed (Howe), or by simply going through the copulative movements while lying upon the back or belly. I call to mind an ingenious instrument devised by one of my patients who had been in the habit of frequently masturbating himself in his sleep, and who was very anxious to overcome his unclean habit.* His physical condition was good. The practice had evidently not affected him there. His mental condition, outside of the fact that he was quick and nervous, which seems to have been natural to him, showed

* *Vide* page 79.

no signs of deterioration from this self-abuse, but all the same he was disgusted with himself for masturbating and was anxious to be rid of this incubus which was haunting him, and which seemed to have a pretty firm hold upon him. He had a close-meshed wire cage made which extended from around his waist to the middle third of his thighs, somewhat like a pair of bathing drawers, and bowed out in front so that his genitals could not be reached by any means in his power. This instrument was so made that it could be opened, working upon a couple of hinges, and was secured by a small padlock. He would fasten this cage round his body the last thing before stepping into bed, having nothing between the wire coop and his skin. Over this he would put on his night clothes. To make assurance doubly sure, after having locked himself up in this machine and the light being put out, he would throw the key away from him on the floor, so that there should be no possibility of his getting hold of it to unlock himself. He persisted in this for many months, although the effort at first was very great, and he assured me that repeatedly, had he been able to have found the key, he would have unlocked himself to masturbate, but finally, by perseverance and determination, he overcame his vicious tendency. I have not seen him for many years, but I have no reason to doubt the fact that he entirely recovered.* This argues a strength of will which is not usually found in this class of patients, yet Spitzka gives an instance where, although the young man, of bad hereditary antecedents, had masturbated for a long time, and in consequence exhibited feeble mindedness and moral perversion, was enabled by force of will simply to recover

* This same device has apparently been independently thought out by an anonymous writer in the *British Medical Journal* of December 7, 1889, who suggests confinement in a cage as a remedy for this habit.

because he chanced to find the commitment papers which had been made out in order to send him to an asylum. Spitzka says that from that time he (the patient) turned over a new leaf, abandoned his bad habit, obtained a clerkship, went into business, stopped masturbating, and exhibited average ability in the performance of his duties. It seems therefore that, even in bad cases, the power of the will may not be absolutely lost. Of course, when we can enlist the patient's interest, and where he is alive to the importance of abandoning his vicious usages, we have the best opportunity for obtaining good results. Where, however, the nervous system is vitiated, and the patient's power of resistance and his strength of will are gone or impaired, the problem becomes much more difficult. Blistering the penis, slitting up the foreskin and other compromise devices are of very little service. Indeed, I think the irritation after a little while rather increases the desire to masturbate than prevents it. A plan has been suggested whereby the foreskin can be closed, somewhat after the fashion of the Bergamasco* lock, and it is done in the following way: "The prepuce is drawn well forward, the left forefinger inserted within it down to the root of the glans, and a nickel-plated safety pin introduced from the outside through the skin and mucous membrane is passed horizontally for half an inch or so past the tip of the left finger and then brought out through the mucous membrane and skin so as to fasten from the outside. Another pin is similarly fixed on the opposite side of the prepuce. With the foreskin looped up, any attempt at erection causes painful dragging on the pins, and masturbation is effectually prevented. In about a week some ulceration of the mucous membrane will allow greater movement and with less pain, when the

* Rabelais, Pantagruel, Book 3, English translation, Bohn's ed., 1864.

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that which takes place with a young adolescent of the male sex, or, as he coarsely expressed it, "the woman is not in it." Not only do habitual masturbators loathe women and the idea of intercourse with them, but they do not hesitate to masturbate before them (Howe). Such men do not, as a rule, masturbate for sexual gratification only; they masturbate because they are lunatics, and wind up, as did Howe's case, in the madhouse or the grave.

Internal treatment by sedatives and anaphrodisiacs may be adopted, but I shall treat more fully on this point when I come to discuss the treatment of spermatorrhœa.

When the irritable condition of the urethra seems to be the cause of masturbation, or where there seems to be a tendency toward spasmodic urethral contraction, difficulty in urination, and frequency of micturition, local stimulation of the prostatic and membrano-prostatic portions of the canal will often be of service. It is in these cases that Lallemand's method of treatment, at one time in such vogue, was apparently so successful, but the operation itself was a very painful one, and the same method can now be accomplished as easily, with less discomfort and with the great advantage that the surgeon sees what he is doing, by making applications of nitrate of silver through the endoscope, and it is astonishing to see what strong solutions the urethra will bear. I myself incline to the belief that the use of moderately strong solutions is of more service than where weak ones are used. With the moderately strong solutions there is occasionally a slight amount of irritation and trouble in passing water, more or less dysuria and exceptionally some bleeding after the operation; but generally speaking nitrate of silver can be used in fairly strong solutions with very slight reaction. The local application then of the silver is *generally* attended with very little if any discomfort, sometimes nothing more

than a sense of warmth in the deeper part of the canal being experienced; sometimes it will produce a yellowish discharge for a few days, which is quite easily controlled by the use of a mild astringent injection in case of need. I have not seen after its use any complication in the way of swelled testicle, etc. Besides the local application, the use of hot or cold sitz baths, drinking of mineral waters, and, if admissible, sea bathing, all play an important part in the question of treatment, but the general plan of medication should be directed to improve the strength and keep up both the physique and morale by proper exercise, always omitting any form which would produce compression, friction, or irritation of the perineum or of the genital organs. In cases where the presence of an irritable or spasmodic condition of the urethral mucous membrane induces a temporary contraction of the canal, besides the use of the endoscope, steel sounds, either cold or warmed, are frequently of service. These can be passed at intervals varying from twice or thrice a week to once a month, according to the exigencies of the case, and often the cure of the habit of masturbation will depend a great deal upon the cure of a small patch of irritable mucous membrane in the urethra.

Of the mechanical forms of treatment two have already been mentioned, to wit: confinement of the genitals in a cage, and infibulation, but there is a third one which I wish to mention somewhat more fully than it usually is touched upon for the cure of this form of disease. I refer to castration, which has seldom been mentioned, and then only in terms of reprobation as an operation to be avoided. While I agree heartily in the main with this view, cases are reported in medical literature in which it would appear as though it were justifiable, and not only justifiable

but necessary, and where the operation seems to have been crowned with success. The first case published in American medical literature that I have been able to discover was one reported by Dr. Josiah Crosby, a well-known American surgeon, who had a wide reputation for sound surgical knowledge and skill throughout the New England States. This case he reported in *The Boston Medical and Surgical Journal* for 1844, and it is of such interest that I give it here in extenso:

"November 5, 1842, I was called to visit Mr. —, aged twenty-two years, whose health had been declining for more than six years. He had secluded himself almost entirely from society, and even from his family—had not eaten with them for four years—had not been in the street more than twice for two years, and for the last year had kept himself mostly in bed. I found him pale, trembling, and dejected—pulse frequent and feeble, appetite bad, digestion impaired, and rather emaciated. At first he was unwilling to give much account of himself, but after a few visits I obtained the following history of his case: About the age of thirteen years he began to masturbate, and, urged by his companions, he practised it some time before he produced an emission. After this he continued the habit more and more frequently, until he would perform the operation every day for several weeks in succession, and very often twice a day. At the age of sixteen his health was so much impaired he was obliged to suspend all labor and active exercise, and had not been able, at the time I first saw him, to resume either. After this time he says he did not practise masturbation much, but had been constantly troubled with involuntary discharges—that the emissions had become painful and exceedingly prostrating. I learned from his friends that he had been attacked twice with furious delirium—both attacks were

miles with as much ease and elasticity as any one, and with every prospect of good health and a life of usefulness, he is actively engaged in making arrangements to go into business. For some months after the operation he had a weeping of prostatic fluid; but as soon as his general health improved this trouble disappeared, and he has nothing of it at this time.

"There was about two drachms of serum within the vaginal coat of the left testicle. The tunica albuginea testis was pale and flabby. The vessels of this coat in the right testicle were very much injected, showing considerable inflammation—there was no effusion.

"Now, as to the propriety of this operation for the removal of such a disease, I admit there may be much doubt. Cauterizing the urethra was not tried, for the want of a proper instrument. This operation, however, is not successful in more than three-fourths of the cases when it is resorted to under the most favorable circumstances, as appears from the cases reported by Mr. Phillips, of the St. Marylebone Infirmary. The parents of this young man were poor, had made many expensive trials to cure him without success, and had determined to make no further effort. From these considerations I was forced to operate, and the happy change produced in the patient, and the great relief afforded to the family, are abundant evidence of the propriety of the operation in this case."

This, as might be expected, drew down from *The Boston Medical and Surgical Journal* a great deal of severe, and, I think, rather harsh criticism, but perhaps that may be forgiven, because there is a sentimental repugnance to castration, except perhaps it be for disease, and yet this form of masturbation is really a disease. Crosby's patient, I believe, was a sexual pervert, a more or less vicious

one, and at times apparently dangerous; a man perhaps whom it would be a mercy to all concerned (supposing his condition to be incurable) to have put quietly out of the way. It seems, however, that this operation cured him, restored him to health, so that from being a violent and at times delirious monomaniac, he became a decent, sober, and quiet member of society.

The other case was related by Dr. Bell in the same journal for 1860, and it took shape in the following extract from the records of the Boston Society for Medical Improvement for that year, being read by the late Dr. Henry J. Bigelow, of Boston, under the heading of two letters which were addressed to him, one by a physician from a neighboring State, requesting his opinion as to the propriety of castration in a case of erotic mania, and the other from Dr. Bell, the superintendent of the Somerville Insane Asylum near Boston, containing his opinion as to the operation in this affection. The first letter reads as follows:

"September 27, 1856.

"DR. J. H. BIGELOW: You will confer a favor on me and my neighborhood if you will give me some information on the following case: There is a young man living near me who has been, I suppose it might be called partially deranged, for nearly a past year; his mind runs altogether upon having sexual intercourse with females, and he grows worse. His conversation and thoughts are on that subject. He will attack any female he sees, and keeps himself indecently exposed when females are present. He is now worse than he was three months ago. He was at the Insane Hospital at—— for about four months, but came home worse than he was when he went. Application has been made to me with regard to castration. What do you think of it? I shall wait anxiously

for an answer from you, and hope to get one by return mail. I am, etc.

"P.S.—This young man is sane on other subjects, and will work on the farm some days; but most of the time he is wandering about, as he says, after the girls. At times he has violent fits of anger, and wants to kill everybody he sees; but he remembers all about it afterward and when talked to about it, says he will kill somebody if he can't get what he wants."

"Monument Square, Charlestown, 9th Oct., 1856.

"MY DEAR SIR: I received your note per last post. I have often been consulted as to tying up the spermatic arteries, the vasa deferentia, and the removal of the testes, in forms of insanity connected with spermatorrhœa. I have known it done repeatedly. In one case Dr. — castrated a clean gone onanist who subsequently rallied, became an active man, and the doctor told me that he never met him that he did not receive his blessing for the great favor he had conferred upon him. In another case of self-perpetrated castration, under a similar state of mind, with which I am acquainted, entire restoration to peace of mind and energy was produced.

"On the other hand, in all the lunatic hospital cases where I have known it done, no valuable results followed. At the Ohio Hospital some years ago it was tried on quite an extensive scale. No case of improvement followed. Indeed, Dr. Ayl told me that in one patient, who previously was quiet and contented, a permanent and dangerous condition of irritability followed. He averred that they had done some d—d thing or other to him, so that things didn't work as they used to.

"I confess that I should recoil from the kind of remedy suggested. I have found that heavy doses of opium,

long continued, do control that nymphomaniacal * disposition, dependent on no local irritation. And I should certainly desire to see this tried to its fullest extent before the other was decided on. A man so afflicted ought, by every consideration of public safety, to be shut up in a lunatic hospital, and the laws are adequate to this end.

"I am, dear sir, very faithfully yours,

L. V. BELL."

It will be seen from his letter that Dr. Bell decidedly "recoils" from the idea of castration, although apparently in one case of Dr. — it succeeded (this may have been Dr. Crosby's case), as well as in another, where the patient was both patient and doctor. In the Ohio Hospital, where it was tried on quite an extensive scale, no improvement followed.

I know that in even suggesting the possible propriety of such an operation I am flying directly in the face of the opinion of ninety-nine per cent. of my medical brethren, but let me ask them this question: Given the case of a masturbating maniac with dangerous proclivities; who shows violent homicidal or suicidal tendencies; who is liable at any moment to injure his neighbors or himself—the latter perhaps would not be so objectionable—whose only hope for the future would be incarceration for life in a lunatic asylum, why should it not be permissible to try this remedy on the bare possibility of its success? If it succeeds, the patient may well part with his testicles in exchange for good health, and, like Dogberry, give God thanks and make no boast of it. If, on the other hand, the operation should not be successful, he is no worse off than

* This refers to the case of a young woman referred to in the above letter. Dr. Bigelow had been consulted by a distinguished physician of Boston about the propriety of removing the ovaries in a desperate case of nymphomania.

before, unless possibly he should resemble the patient whom Dr. Awl mentions, who, after castration, said "they had done some d—d thing or other to him so that things did not work as they used to"; the prime mistake here, however, was in meddling with a patient who had previously been quiet and contented. It was a pity the hospital people could not let well enough alone. I think the advisability of this operation is a question which we may well ponder seriously and not dismiss with the off-hand comment that it is not to be thought of—that no decent or honorable surgeon would ever consent to do it. We geld vicious members among the lower animals; why not the highest animal—man? Of course, such an operation should be resorted to only after everything else which can possibly promise success has been tried and proved a failure.

Another procedure has been suggested, to wit, section of the dorsal nerves of the penis. This was done upon a man of middle age who had been insane only about three years, but had not shown any signs of early neuro-mental degeneracy.

The operation consisted in making a transverse incision across the dorsal surface of the penis, about half an inch from the root of the organ. The nerves, two in number, were detached from the surrounding tissues, "raised by means of a blunt hook, and about half an inch of each nerve was resected." The wound was closed by a continuous catgut suture thoroughly dried by washing with ether, when a layer of thin gauze was made to cover it by means of collodion. "The healing process took ten days and the patient made a satisfactory recovery." The result of the operation was that "the man was very much depressed for some time after. He has quite given up masturbation and has, for over a year, been very much

improved mentally." He reported that he was not as energetic as he was before the operation, and the only distinct sensation he had occurred when he was micturating. His age at the time the operation was reported is stated to have been forty-nine.

The surgeons reporting this case write that the result justified the operation. "The man is no longer the degraded creature he was. So far there is no atrophy of the testicles" (A. C. & H. E. Clark).

Another mode which has been suggested, and which certainly seems to have been successful in some instances, is that advocated by Schreck-Notzing, to wit, the suggestion treatment. This is worth a trial, even in the most unpromising cases, not only where the patient has acquired the habit from thoughtlessness or from imitating others, but where it seems to have been contracted as a consequence of the psychopathic condition. Sinani-Natanson gives such a case, which I quote here *in extenso*, as a proof apparently of what this method of treatment may sometimes accomplish, even in desperate cases, and should it succeed with a fair proportion of patients, it would certainly place a valuable means of treatment at our disposal.

The subject was a boy, one E., whose family history is as follows: The mother, from the husband's statement, was a "psychopath." She was eccentric in her behavior, and among other things was addicted to the intemperate use of spirituous liquors. The father, as the doctor saw when conversing with him, was an excitable man, nervous and unequal in his behavior when face to face with his son. His speech was peculiar; he talked quickly and he swallowed his words, and besides seemed to have great difficulty in expressing his thoughts. The boy lost his mother when he was two years old, and during the

succeeding four, for the boy was only six years of age when he was brought under Natanson's observation, his education had been greatly neglected. His father apparently paid no attention to him, and it was only when the boy had a stepmother that his peculiarities and eccentricities of character were noticed. On the slightest emotion he would make the most horrible grimaces and gestures, and would seize his own hands convulsively. If he saw a servant with naked feet, he would throw himself headlong at her feet. He would remain for a long time in the *cabinets d'aisance*, and would emerge from them scarlet and covered with sweat. When asked what he was doing in those places for hours together, he very frankly replied that "he was amusing himself." Even at this tender age he was remarkable for the possession of an imagination which was most perverse. He seemed to have a peculiar pleasure in remaining in those places* and others of a similar character. His eccentricities sometimes took on a criminal streak; for instance, he would exclaim that his great desire was to kill his parents and then immediately go into the forest and live there all alone. The father himself, even though at times he showed extreme cruelty to his son, nevertheless maintained that he was "a genial boy"; as for the amusements the lad indulged in, he considered them simply as innocent pastimes, and gave himself no further trouble about them, considering that the child's habit of masturbation was nothing but a bad trick from which he would recover in time.

For two years the patient was under the care of Professor Bistroff, and there pursued a general treatment of diet, walks, gymnastics and cold affusions to the spine. Besides this, a special bandage was made which hid the

* W. C.

boy's sexual organs from his sight, leaving only a small opening for him to urinate through, and in addition, a sort of straight jacket was made which put it absolutely out of his power to play with himself. The father had the good sense to continue this treatment for two years, and he also added the whip to the other treatment, but upon the urgent insistence of the doctor that whipping would only increase the lad's sexual excitement he desisted.

It is well to note that this method of treatment, while it put it out of the youngster's power to gratify his passion, had not the slightest influence upon his character. He persisted in the most immoderate extravagances to the entire despair of his family, and the father decided finally upon the advice of the doctor to have recourse to hypnotic treatment. He was therefore brought to me on the 30th of August, 1890, when the father gave the following history. The lad was set, stubborn, and wicked. He delighted to bruise people, to torment animals, and he experienced an untiring amusement and pleasure in maliciously teasing his little brother, and by his tricks and eccentricities he would frequently make his instructress cry.* His intellectual faculties seemed to be pretty good, and even precocious for his age. He would make faces about any subject whatever, no matter what it was, and he would convulsively twist his fingers. His face was slightly asymmetrical. He possessed the faculty of moving his ears and his scalp, which is an indication of degeneration. As regards his physical state, we may say that he was totally wanting in modesty. To all the questions, no matter how searching or familiar they were, he would respond in the frankest manner,

* When she went to obey a call of nature he would plant himself before the door of the W. C., beat upon the door, and roar with laughter.

brutally so. He would recount with a simplicity which was almost cynical all the details of his bad habits, and would faithfully paint the pleasure which it gave him in performing them. If anything afforded him delight, he manifested his joy in an extraordinary manner by animal cries and by the most extravagant gestures. His face then became horribly convulsed, his eyes squinted, his teeth chattered, the muscles of his face were violently contracted, his whole body trembled, and his hands became contorted. He immediately began to rub his chest, descending to his belly and then stopping at his genitals. It was very evident that here was a boy who was not only a masturbator, but also a beautiful example of the psychopath.

For a short time no change was made in the preceding treatment, but finally hypnotism was resorted to. It was found easy to put this subject to sleep, and when asleep the suggestions were made to him not only that he should give up his bad practices, but that he should make up his mind to abstain from all other manifestations and peculiarities of his neuro-psychopathic temperament. In addition to abandoning his habit of masturbation, the suggestion was made that he should abstain from all ideas and all movements that would in the slightest degree tend to excite his genital organs, as well as the moral causes which would produce such excitement. Suffice it to say that this youth after forty-five séances of hypnotic treatment was apparently cured in eight months. His physical peculiarities gradually disappeared, his mental powers were improved, he went to school, and on May 19, 1891, eight months after the beginning of this treatment, he passed his examination to go to college.

In these cases little need be said about the diet. Nutritious, non-stimulating food should be given to the suf-

ferer from this form of disease and the meals should be so arranged, as a rule, as to allow of the last one being taken two hours or more before going to bed upon neither a full nor an empty stomach. Stimulants should be tabooed, particularly fermented drinks, and tea is preferable to coffee if one of the two must be used; chocolate or cocoa is better than either. Should a stimulant be needed from the debilitated condition of the patient, the best form is probably that of whiskey. If possible, however, even this should be avoided.

For one class of patients there is very little to be done in the way of treatment; indeed, very little treatment is necessary. I refer to those instances where men, adult and apparently sane, practise masturbation as an alternative for fornication. Once in a while I come across such a man who has the courage of his convictions and who admits that as between running the risk of contracting syphilis and danger from the amount of masturbation which he indulges in, he prefers the latter, and I have seen cases in which I believe such a course is justified. I do not put it as brutally nor as cynically as the "beloved professor" quoted by v. Gyurkovechky, who stated to his small and apparently select circle of scholars that masturbation, when practised in moderation, has many advantages, particularly for the young student. He saves money, and, what is of more importance, saves time. He makes no unpleasant nor entangling alliances; makes nobody unhappy, and runs no danger of contracting venereal disease. Vecki says that, looked at from an egotistical standpoint, this advice is sound, provided that the man is in a position to always be a moderate masturbator, and therein lies the key position. Do men remain moderate masturbators? I believe that the majority do, but there is a

minority which do not. If this belief be correct, then for this unhappy minority the advice of the "beloved professor" is not to be thought of, because these men cannot indulge their sexual passions with any degree of moderation until nature compels them to, and these masturbators are exposed to twice the danger that the fornicators are, because they are always ready; time and place are nothing to them; there is a fatal handiness—pardon the expression—about the performance that makes it capable of indefinite repetition; they need no partner in their joys, and as they are not protected by the power of a strong will to prevent indulgence in the habit more than is absolutely necessary to relieve their sexual distress, these men are in danger and are following a perilous course. They may continue to masturbate and no trouble ensue, but the younger and hotter blooded the persons are, the more imminent is the danger of their overstepping the bounds of prudence and then finding themselves in the same plight that Goldsmith writes that "lovely woman" sometimes finds herself in when she "stoops to folly."

ONANISM. (COITUS INTERRUPTUS: VULGO,
WITHDRAWAL.)

By this term is to be understood the retraction of the male organ from the vagina during coitus at the time of the orgasm, and the finishing of the act by emitting the semen outside of the woman's genitals. This is the fault for which Onan is believed to have suffered punishment by death, and which he committed in order to prevent raising up children to his brother. The word has been improperly used as a synonym for masturbation, from which, however, I believe it to be entirely distinct, the only point in common being that the semen is wasted in both cases. It is of ordinary

occurrence, not only among married but among unmarried persons, the object being to prevent conception.

Varieties.—There are several varieties of this kind of abuse, to wit: *coitus incompletus*; *retractus* and *interruptus*; *protractus* and *interruptus-protractus*.

In *coitus incompletus* there is no emission whatever, the act ceasing before any ejaculation takes place.

In *coitus interruptus* and *retractus*, emission extra vaginam. *Coitus* otherwise normal.

In *coitus protractus* the emission is checked and retarded, but *coitus* is finally ended in the normal manner, *emissio intra vaginam*.

In *coitus interruptus-protractus* the emission is checked and retarded, finally taking place extra vaginam.

Causes.—There are several causes which may induce this condition of affairs, one of the most common I am inclined to believe being the wish to avoid the responsibilities attaching to a large family, as well as the desire, in cases of illicit intercourse, to avoid impregnating the woman. The irritation arising from non-completion of the sexual act, in conjunction with other causes, is chiefly responsible for the various symptoms which occur, the reputed dangers of which, however, I consider to be grossly exaggerated, precisely as we found to be the case when considering masturbation. I believe that if temperately done, the act may be consummated without any very material ill results. It is only in those persons who have some underlying nervous irritability, or weakness of the nervous system, that we see the bad effects which are held to follow this practice, and I am quite of Fürbrenner's opinion, when he writes that it is the continued *excess*, not the wrong against nature of the act which injures, and produces the neurasthenic

Symptoms.—The physical symptoms arising from this practice are occasionally as marked as those due to intemperate and prolonged masturbation, so far as the local manifestations are concerned, and in some cases, particularly in neurotic persons, the nervous symptoms may also be quite pronounced. The former may be divided into local and general, and we will consider the local manifestations first.

Patients will frequently consult the surgeon with a history something like the following: They will report that for a longer or shorter time they have been troubled with a sensation of fulness or heaviness in the perineum, associated with a desire to pass water more frequently than usual, necessitating when the desire for urination comes on, a speedy evacuation of the bladder, otherwise decided discomfort ensues, with continuous irritation and sometimes the voiding of a few drops of urine, which seems to relieve the irritability of the parts. This first begins with a sense of itching or discomfort in the penis, and is generally referred to the anterior third rather than to the deeper portion of the canal.

Occasionally the surgeon is consulted before the symptoms have proceeded thus far, and the only symptom complained of can be summed up as irritation of the anterior portion of the urethra, accompanied by a desire for frequent micturition. If the disease progress and the patient has not sought relief for these symptoms, he notices later on that he has a constant desire for sexual intercourse which never seems to be gratified, while his copulative power is diminished. His erections, although frequent, are not complete; there is a flabby turgescence of the virile organ without perfect erection, and if, perchance, an erection should be powerful enough to permit intromission, the ejaculation is premature and attended with more or less

existence of a stricture. Upon inspection, the male organ is seen to be flabby and frequently in a turgid condition, not sufficient to produce even a slight erection, but enough to impart to the surgeon's finger a gristly feeling. The lips of the meatus are frequently everted and the mucous membrane of the external orifice is of a deep red or purple color. The patient reports, in cases where the symptoms are very marked, that the stream of water does not come as freely nor as continuously as before, tending to dribble away toward the termination of the act of urination, and accompanied by very little of the pleasurable sensation which the normal urethra feels during its distension by the stream of urine.

If examination with a sound be made, the urethra is found to be more or less sensitive, from a condition where there is decided discomfort in the passage of the exploratory instrument, to an hyperæsthetic condition which is almost hysterical in the expressions of pain which it elicits, and the vociferous objections of the patient who is under examination. Sometimes when the bulbous portion of the urethra and from that backward to the prostatic portion is reached, the urethra contracts so violently that the instrument is arrested and further progress is prevented for a few minutes, until the spasmodic contraction of the canal has passed off. The sound being advanced, apparently produces the most excruciating torture, the patient losing control of himself and shrieking with a vigor worthy of a better cause. The instrument finally glides into the bladder, when it produces a sensation of faintness, nausea, and not infrequently a desire to evacuate the bowels. The withdrawal of the sound is also attended with some difficulty, the instrument being tightly grasped in its passage out, and occasionally there is quite smart bleeding upon its withdrawal. In these cases the greatest impediment

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water, frequency and urgency in micturition, obliging the patient to pass water every few hours and then only in small quantities, and frequently rousing him during the night. This is explicable in view of the intense irritation present in the deeper portion of the urethra, which by reflex action produces the vesical disturbance, and is not at all due to inflammation of any portion of the bladder.

The testicles also are implicated, either one or both being affected with neuralgic pains, very probably dependent not upon any localized affection,—for indeed the testicles are found to be perfectly sound, except in so far as their sensitiveness to handling is concerned, which seems to be increased—but rather upon the neurasthenic condition which accompanies this form of disease.

Spermatorrhœa and impotence are also spoken of as the sequelæ of coitus reservatus, but from my experience I am strongly inclined to doubt if these evidences of sexual debility occur as a direct consequence of this habit. When they do, I think they are rather dependent upon a stricture of the urethra, due either to an antecedent clap, or else to the intense localized hyperæsthesia of the urethral mucous membrane, and this is well exemplified in a case which I have recently seen, of a young married man, thirty-four years of age, who consulted me on account of impotence and pollutions. Upon examination I found that he had quite a tight stricture in the deeper portion of his canal, and the endoscope also showed some puffiness of the mucous membrane, marked congestion, and all the evidences of a hyperæsthetic condition of the urethra. He had been for some few years past in the habit of indulging *in coitu reservato* from motives of family economy, and I am perfectly satisfied that his lack of erections, his inability to perform his conjugal duties, and his seminal losses when fondling his wife, were due to nothing except this

does not enjoy his meals, and the only thing possibly from which he really derives any satisfaction is in drinking, and that again becomes a burden to the flesh from the activity of his kidneys filling his bladder up and requiring a constant emptying; indeed, the symptoms sometimes appear to be far in excess, so far as intensity is concerned, to what the physical signs in the case would seem to warrant.

Occasionally I have found that such subjects will indulge in masturbation, with the idea that this may relieve the nervous irritability of the parts, but it is hardly necessary to say that this is simply adding fuel to the flame and increasing the burden which the unfortunate urethra is called upon to bear.

In addition to these symptoms the patient will sometimes complain of a sense of *formication and irritation of the skin, asthma sexuelle with cardiac palpitation, exaltation of the senses of hearing, taste and smell*, a condition of constant *fatigue and exhaustion, disgust with life* and with his surroundings, a *dread of impending misfortune*, and a general feeling of *hopelessness* both as regards the present and future. These are all mentioned as the effect of this habit, and it has also been claimed that *epilepsy and paralytic dementia* may result from indulgence in this form of sexual vice (Eulenberg). It is of course possible that these symptoms may occur in subjects who have persistently and intemperately practised coitus reservatus, but I believe they are due to some inherited or acquired form of nervous disorder, and that the practice has been merely the exciting cause which has roused these symptoms into activity and brought them to the front, when without this exciting cause they would have remained quiescent. In this habit, as in masturbation (of which after all coitus reservatus is but a variety), the symptoms

occur because the patient is a neurasthenic, and under those circumstances, the habit may be considered to a certain extent as the exciting cause, although it is not the real one. Moreover, I believe that it is much more apparent in the young and immature, in youths who have not yet attained their full growth and strength, than in the ordinary healthy adult; indeed, given a man who is both physically and mentally sound, who is not a neurasthenic either by heredity or by acquirement, I believe that he may practise this habit for a long time without inducing any bad results in himself, and if it be carried on in moderation, it is quite probable that he may perform it his life long and never be reminded that he is flying in the face of natural laws.

One form of preventing conception is of long standing and of almost universal custom since the time of its invention by the surgeon whose name has been handed down to grateful generations as the inventor of it. I refer to the use of condoms. A great deal has been written and talked about the terrible consequences resulting from the use of this preventive, of which it has been wittily remarked that it was a cuirass against pleasure and a cobweb against danger. It has been held that it produces many of the neurasthenic symptoms which have been ascribed to coitus reservatus. I do not myself believe that its use is injurious, although it was broadly stated at the Sixth Congress of Russian Physicians at Kiew in 1896 that the results from the use of the condom were even worse than those from coitus reservatus (Korsakow).

Treatment.—The treatment, fortunately, is simple enough and, in the majority of cases, eminently successful. It must be thoroughly drilled into the patient's mind that a continuation of his bad habit is going to result badly for him, inasmuch as it may induce impairment of his sexual powers, and he has himself generally seen

enough of the disturbance to this function in withdrawal to make him believe that the surgeon is telling the truth. He must furthermore be told that, certainly for the present, perhaps for some time to come, he must forego all marital duties, or what stands *in loco marito*, if he be a single man. This is the first and essential step in the treatment, and if he is not willing to conform to this advice, let him plainly understand that he may as well continue his pernicious habit until he finds himself in a condition where he is willing to accede to this most important requisite for recovery.

The next thing will be to relieve the hyperæsthetic condition of the canal, and the sound is perhaps the best thing that can be used, which may be passed either with or without cocaine being applied locally to the urethra. The sound should be of the largest size which the meatus will admit. Having first been warmed and oiled it should be passed down into the canal and left *in situ* for a couple of minutes; and this time should be gradually extended until the sound is left in for fifteen minutes at a sitting. Some authors advise leaving in the sound for a longer time, but I think fifteen minutes will fill all the requirements in these cases. This use of the sound may be followed by local applications made directly to the irritated mucous membrane through the endoscope, of nitrate of silver, of tannin and glycerine, or of some preparation of zinc, and combined with this the employment of Winternitz's psychrophore, through which a jet of hot water should be sent, the heat being regulated by the degree which the urethra will stand, which in the deeper portion is quite considerable. From 120° to 130° F. I have frequently used, and it may be gradually brought up to this limit from 110° or 115°. As the treatment progresses the temperature may be reduced until it reaches

under no circumstances must he attempt intercourse, and after his recovery he must be careful to perform it in the way in which nature intended it should be done, and that the fewer experiments he tries in the way of new methods, the better it will be for his sexual health, if not for his sexual morals. During the course of treatment also he must give up the use of stimulants—wine, whiskey, and especially beer—and should he complain that the regimen is rather strict, the surgeon may gently remind him that “he who dances must pay the fiddler,” and that he cannot expect to have all pleasure and no pain.

Injections, in these cases, are of very little use. Everything requiring to be done locally must be left in the surgeon's hands, and the less the patient irritates his own urethra the better it will be for him. In the question of local applications to be made, Bangs speaks deprecatingly of strong solutions of nitrate of silver, and on this point I quite agree with him. Strong solutions here, contrary to what we find in cases of chronic masturbation or chronic inflammation of the deep urethra from gonorrhœa or other causes, seem to produce disturbance and to retard rather than to help the cure.

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SPERMATORRHEA.

traction, no consciousness of an emission, and with no sexual feeling; indeed, with no sexual thoughts or ideas. All the patient is sensible of is that his urethra leaks and that the glans penis is moist, sometimes not even that; or else that he is losing a little fluid during stool or urination, and that at those times he has a queer feeling of smarting in his posterior urethra. The same thing happens if he strains while holding the thoracic and abdominal muscles tense, as in breaking wind, lifting a heavy body, sneezing or coughing. Again, a noteworthy point to be observed is that driving over a rough or jolting road, horse-back riding, sometimes even rapid walking or running, which have been said to produce diurnal pollutions, in spermatorrhœa occasion no seminal loss, and, moreover, in this latter disease the sexual powers are seldom seriously impaired, sometimes are not interfered with at all, while in pollutions sexual impotence is a not infrequent concomitant and is sometimes even a permanent condition.

It may be objected that I am drawing too rigid a line of demarkation, but I think not; for, to my mind, there is a very decided difference between the two diseases, and I regret to say that most physicians are too prone to regard this affection of the generative organs with careless indifference, considering most of the discharges from the sexual organs either as evidences of hypochondriasis, or else ascribing them to an inflammation of the prostate without taking the trouble to examine the discharge for the presence of spermatozoa.

True *spermatorrhœa* does not usually occur unless there be an *insufficiency of the ejaculatory ducts*. This is often associated, as in diurnal pollutions, with congestion and hyperæsthesia of the deeper portions of the urethra and of the prostatic *glandula*, but in diurnal pollutions there is dilatation of the mouths of the ejaculatory

ducts and there is no flabbiness nor insufficiency of their contractile powers, whereby the semen leaks away involuntarily without any control on the patient's part. In spermatorrhœa the dilatation is quite pronounced, and is frequently associated with chronic inflammation of the prostatic urethra and of the tissues surrounding the mouths of the ducts.

Causes.—These are principally :

1. Mechanical pressure.
2. Inflammation extending from the deep parts of the urethra to the ejaculatory ducts.
3. Inflammation of the prostate gland and the vesiculæ seminales.
4. Affections of the nervous system.

Acton and other writers upon this subject include hard study, mental emotions, sexual excess, continence, drugs, and almost everything else on earth to account for the existence of a spermatorrhœa. I am not disposed to admit such a wide range of causes for the existence of this disease, and incline to account for this multiplicity of reasons by the fact that the distinction between spermatorrhœa and diurnal pollutions has not been borne in mind, and hence the confusion.

To consider them in the sequence of their causes :

1. *As regards the mechanical pressure.* One of the best known and time-honored causes has been the supposed compression of the vesiculæ seminales during a constipated passage of the bowels, and sometimes from straining in voiding the last drops of urine in micturition, and it has been believed that this is due to direct compression upon the seminal vesicles by the hardened fæces contained in the bowels. Peyer is of the opinion that this is a mistake and points to the fact that the position of the seminal vesicles between the rectum and the bladder is such that

the urine when first voided is perfectly clear; it is not until the last few drops are passed from the urethra that the urine becomes turbid and milky in appearance, attended with a slight stinging in the deeper portion of the canal. An examination of the last portion of the urine, for he has been instructed to pass it in three separate instalments, reveals the presence of spermatozoa. But, as I have said, of the two varieties, the one which occurs at stool is more frequent than the one which occurs during urination alone.

2. *Inflammation of the posterior portion of the urethra and its extension to the ejaculatory ducts.* The most fruitful of these causes is due to intemperate and continuous masturbation, onanism (coitus interruptus), long continued chronic gonorrhœa (Fürbringer, Tano), and strong or irritating injections, especially when given with the hope of aborting an acute attack of gonorrhœa. Benedikt states that injections of brandy administered to themselves by Austrian soldiers for the cure of clap was a not infrequent cause of spermatorrhœa, and Fürbringer states that he has seen an aqueous solution of lead injected into the bladder produce spermatorrhœa.

Fürbringer furthermore says that in one hundred and forty male patients afflicted with chronic gonorrhœa (some of the cases having existed for ten years), in from eighteen to twenty per cent. abundant spermatozoa were found in the urine, and this form of spermatorrhœa was not associated with seminal losses during defecation.

Tano in his paper gives the history of twenty-six cases, in thirteen of which (fifty per cent.) the spermatorrhœa seemed to be due to gonorrhœa of the posterior portion of the urethra, and in five of these it was complicated with a stricture at the same portion.

In my own experience I must confess that I have not

seen such an abundant number of cases of spermatorrhœa originating from chronic gonorrhœa. Indeed, I think it is exceptional in this country to see cases of spermatorrhœa, of whose starting point a chronic clap can fairly be assigned as the cause. Nor have I ever found that spermatorrhœa could be regarded as originating from an attack of acute gonorrhœa, but von Wahl gives the history of one such case, which, so far as my knowledge goes, is unique in medical literature. The summary of this case is as follows:

A young medical student, nineteen years of age, who had never before had an attack of gonorrhœa, presented himself with the following symptoms, namely, a mucopurulent discharge from the urethra of one week's duration. The condition of the first portion of urine passed is not mentioned, but the second is reported as clear. Microscopically examined the secretion showed abundant and characteristic intra- and extra-cellular gonococci. The treatment instituted was by prolonged injections of one-quarter per cent. strength of protargol given in the manner recommended by Neisser. Four days after, that is, on the 14th of February, no gonococci could be found in the secretion, which was mucous, and the second portion of urine passed was still clear. Five days later, on February 19th, there was no more discharge, but both portions of urine passed were markedly turbid. In the first portion there were shreds. The microscopical examination gave the following: The shreds of the first portion of urine consisted of pus cells, with few but characteristic intracellular gonococci, and about the shreds were seen a few scattered spermatozoa. The examination of the second portion, which had an unusual, opalescent appearance, gave similar results, only that here the pus cells were few in number, and the gonococci absent, but there

were abundant spermatozoa. On the 24th and 27th of February the microscopic picture was the same, excepting that the gonococci were absent; spermatozoa, as well as the cells from the testis (Hodenzellen) were present, but the secretion from the prostate, that is to say, the prostatic granules and amyloid bodies, was entirely absent. In von Wahl's opinion he had now to deal with a clear case of urinary spermatorrhœa, the patient having no involuntary seminal emissions, nor during defecation did any drop appear at the urethral orifice. In view of the fact that strong injections sometimes induce spermatorrhœa, von Wahl thought it possible that the spermatorrhœa had been induced by irritation of the posterior portion of the urethra by his prolonged protargol injections, and so on the 6th of March he stopped all such local treatment. From the 13th to the 18th of March fewer spermatozoa appeared in the urine, the urethral discharge ceased, and as the urethritis disappeared the spermatorrhœa also vanished. In order to clear up the question as to the influence that the injections exercised in producing this discharge, on the 18th of March von Wahl began the injections of protargol again, but in stronger doses (from three-quarter to one per cent. strength). Nevertheless, the presence of the spermatozoa in the urine steadily diminished, and on the 23rd of March none were found in the urine. He therefore concluded that the injections had had no influence whatever in inducing the spermatorrhœa. Up to the 30th of March a very small number of mucous shreds with epithelial cells was still evident in the urine, but they finally disappeared, the urine being examined twice a week up to the 7th of April. Von Wahl therefore concluded that this attack of spermatorrhœa was due to the acute attack of gonorrhœa, and as one got well the other disappeared. At no time was there

or prolonged and intemperate masturbation. Trousseau cites cases of spermatorrhœa due to motor neuroses with paresis of the ejaculatory ducts, and I have myself seen cases which I was unable to assign to any other cause than the existence of a chronic myelitis as the reason for this spermatic difficulty, although I frankly admit my belief that a large proportion of cases is due to a local and not to a constitutional cause, differing in this respect from Paget, who regards spermatorrhœa as "not properly a disease of the sexual organs; it is a disease or disorder of the nervous system and may most probably be referred, as I have said, to a too irritable condition of the spinal marrow or of some portion of it." In those cases where the nervous system seems to be at fault, the patients themselves are generally ignorant of the fact that they are suffering from spermatorrhœa, the surgeon being consulted because the patient complains of severe pain in the back, headache, marked burning of the eyes and a feeling of drowsiness, with sometimes a more or less pronounced nervous chill at the time of the seminal loss, and lastly, by a very peculiar and sudden feeling of nervous depression immediately after stool; symptoms which are inexplicable to the patient and perhaps would be to the surgeon, unless he is aware of the possibility of their being due to a loss of semen. This is especially noticeable in neurotic subjects, in persons who have suffered more or less from nervous debility and exhaustion from their youth up, and who, in the large proportion of cases, give a history of nocturnal incontinence of urine, which may sometimes be diurnal, and in whom as soon as puberty begins seminal emissions occur with a frequency altogether disproportionate to their time of life. It must be remembered, however, that occasionally spermatorrhœa occurs in persons who are perfectly healthy, in whom there has been no antecedent cause what-

rived from other sources, it is clear to my mind that spermatic losses may occur without the slightest detriment to either the patient's physical or mental well-being. Of course, there are cases where the opposite is true, and the question arises, is spermatorrhœa a disease *per se*, or is it not rather the symptom of some underlying morbid condition, be the same of local or constitutional origin; is it not this morbid condition which produces the various evil symptoms which sometimes accompany spermatorrhœa, and not merely the seminal loss? It will be remembered that in the chapter devoted to masturbation I dissented from the generally expressed view that the loss of semen was necessarily a great shock to the nervous system, and I expressed it as my opinion that many cases occurred in which masturbation was productive of no evil results, provided it was temperately performed, and that everything depended upon the physical and nervous condition of the patient; but of course, like everything else, this practice may be run into the ground, and then constitutional symptoms occur which are oftentimes obscured by the more prominent local symptoms of masturbation, with the attendant seminal loss, be the same as pollutions or as spermatorrhœa.

Besides the causes which have been assigned for spermatorrhœa, others may be mentioned; to wit, a *chronic nervous diarrhœa* is sometimes stated as an exciting cause, but only where there is *inflammation* of the *posterior* portion of the *urethra*; otherwise a diarrhœa, whether acute or chronic, should not produce seminal losses. *Worms, fissures of the anus, piles, rectal irritation and stricture of the urethra* may produce spermatorrhœa as well as diurnal pollutions, and in the chapter where the latter are discussed these affections will be mentioned as among the causes for this form of disease. Kaula gives one case

(which, however, is by no means convincing) where *sypilis* was regarded as the cause of spermatorrhœa, and Dickerman cites a case where *oxyluria* produced diurnal pollutions. Peyer speaks of having seen cases of *gout* and *rheumatism* as inducing this variety of disease, and he also states that marked spermatorrhœa has occurred in cases of convalescence from *typhus*, but in all these instances it is well to note that there had been a precedent inflammation of the posterior urethra from long-continued masturbation, and I believe that these illnesses had simply called into existence a former neurasthenic condition which was the origin of these seminal losses.

Lapowski has recorded the history of a singular case in which spermatorrhœa seems to have been due to the existence of *tænia solium*, which, so far as I know, has no duplicate in medical literature. Dr. Lapowski says that to his knowledge it is the first case. It is so interesting that I shall give it here in full as it was reported to the Section on Genito-Urinary Surgery of the New York Academy of Medicine. It runs as follows: "It was a case of spermatorrhœa and prostatorrhœa due to *tænia solium*. The patient, twenty-eight years old, came to him about the first of September with a constant discharge from his meatus. The discharge was milky, sticky. He had suffered from it for eighteen months. He gave a history of soft chancre several years ago and six or seven attacks of gonorrhœa during his life, the first attack when he was eighteen years old, the last attack six or eight months before he came to him. Injections and internal medication were used during the gonorrhœal attacks. For the last eighteen months he noticed a discharge coming from the penis. He did not pay any attention to it for some time; but when the discharge began to appear at daytime and at night, he consulted physicians, who ascribed his sufferings to the gon-

orrhœa. All possible known remedies were tried, and yet when he opened his meatus he always saw some milky discharge. The physicians he consulted treated him for gonorrhœa because gonococci were found in his discharge. The gonorrhœal discharge was stopped, but the milky fluid always appeared. When he had the gonorrhœa he could not see the milky discharge, but when it stopped the discharge always reappeared. When the speaker first saw him, there was no gonorrhœal discharge at all; the meatus was perfectly clean; no redness, no swelling, no pain. The first and third portion of urine contained small shreds, the second portion was perfectly clear. The microscope revealed in the shreds gonococci (Clapewski's and Weigert's methods). The speaker said he could never see the discharge coming out from the patient's meatus. It always seemed a milky fluid. On examination he found it contained prostatic fluid and spermatozoa. He examined the discharge nine times, and six times found prostatic fluid alone without spermatozoa and three times both. He proposed to the patient several means of treatment who always said: 'Doctor, it was done to me.' He found the prostate in normal condition; painless, nothing abnormal to the touch in the rectum. He succeeded twice in pressing out seminal fluid with spermatozoa, and the seminal vesicles seemed to be normal to the touch. One day the patient came to him, and during the examination he saw the discharge oozing out from the urethra. The microscope revealed prostatic fluid and spermatozoa. He washed out the anterior and posterior urethra. He put his finger in the rectum and tried to reach the prostate, but failed to reach the seminal vesicles. He did find neither pus in the pressed-out fluid nor spermatozoa; only amyloid bodies, and upon the addition of a one-per-cent solution of phosphate of ammonia, Boettcher's crystals.

found to be seminal in character. Pickford also writes that in persons who have always lived a continent life and who have denied themselves all sexual indulgences, the vesiculæ seminales seldom contract, and as a consequence these seminal vesicles become over-distended and are emptied during stool. Peyer holds that this view, physiologically speaking, is absolutely incorrect, and I quite share Peyer's opinion, for I am exceedingly skeptical about the occurrence of such a condition, and with regard to continence inducing spermatorrhœa I am equally incredulous.

Let us look for a moment at what happens in persons, few and far between, I admit, who have lived perfectly continent lives; by that I mean knowing neither woman nor their own hand, in a sexual sense. These men, usually having no thought of sexual intercourse in their mind, are very seldom troubled with nocturnal pollutions. Occasionally they may have one, and if they are youthful and callow they are at first much alarmed and seek the advice of some medical man. If they are imbued with a wisdom beyond their years, they go to some reputable member of the profession who explains to them the physiological causes of this accident and sets their mind at rest, advising them with regard to physical exercise, mental employment, and kindred subjects, with the consequence that they do not worry about their seminal losses. Indeed, many of them are so little troubled with sexual desires that they not infrequently complain of the absence of erections and express the fear that they will be found wanting when the time comes for them to normally exercise their generative functions, but on that point the physician can generally soothe their anxiety by telling them that they can depend upon it when the time comes they will be found capable of doing their duty, and meanwhile that they had better think nothing more about the matter.

be so much enjoyment attendant upon the exercise of this function.

Age.—The age at which spermatorrhœa occurs is usually that of sexual capacity. It is seldom seen prior to the fifteenth year (Peyer), although it may be present in advanced old age. As a general rule it is most frequent between the ages of twenty-five and fifty-five (Albers).

Changes in the Semen.—If the spermatorrhœa be not frequent nor of long standing, the semen probably undergoes very little if any change from what it is normally; but where the disease has been of long continuance, the semen diminishes in amount and in consistency, the fluid becoming thin and watery, and containing few and sometimes no spermatozoa. In this condition these bodies when present are usually small and deformed, the head being sometimes disproportionately enlarged as compared with the body, or vice versa; their movements are slow and the viability of the spermatozoa is decidedly diminished. Sometimes the imperfect development may go so far that these bodies retain their cellular form, being found associated in groups and bundles, united together by the cellular elements (Peyer and Fürbringer). If the spermatorrhœa is associated with congestion of the neck of the bladder, of the urethra or of the seminal vesicles, pus and blood are sometimes found mixed with the seminal fluid.

Urine.—Spermatozoa are not infrequently found in the secretion from the kidneys, and sometimes there are evidences of chronic inflammation of the urethra, as shown by the presence of pus and mucus in this fluid. Lallemand and Trousseau have called attention to the existence of curious gelatinous bodies which they supposed to have come from the seminal vesicles, resembling grains of sago; they are enveloped in quite a thick and tenacious capsule

of phosphaturia, the nature of which can only be decided after a microscopical examination (Posner). In addition to these phenomena which appear in the urine, the same neurotic renal symptoms are observed in this disease as are found in cases of pollution, to wit, the urine is frequently abundant; almost colorless in appearance, it contains a large amount of phosphates and oxyates of lime besides albumen and sugar in small quantities; in other words, the urine frequently simulates those cases of nervous disorder which are met with in diabetes insipidus.

Symptoms.—The symptoms in spermatorrhoea vary greatly, in some cases being so entirely absent that, but for the accidental discovery of spermatozoa in the urine, the case would perhaps never have come under the surgeon's care; while in others, the manifestations are so marked that there can be little doubt as to the nature and character of the disease.

As a rule, the first symptom that directs the patient's attention to his disease is the presence of a slight *sticky discharge* at the meatus after stool or urination, or he observes that the last few drops of *urine* voided are *turbid and thick*, and sometimes the patient reports that during the daytime even, there is more or less *moisture about the genital organs* and a feeling as though fluid was exuding from the urethra, which upon examination proves to be the case. If this drop be examined, sometimes no spermatozoa will be found, while at other times their presence is unquestionable, but it should be borne in mind that it is never safe to make a diagnosis until several specimens of the fluid have been examined, for the mere fact, as I have stated, that spermatozoa are not found in any given specimen does not necessarily preclude the possibility of the disease being present, inasmuch as if the disease has

some in the afternoon, and some in the evening and this should be continued for several days. The water passed at stool should also be collected for examination. This should be carefully searched for spermatozoa, and the investigation ought certainly be made several times, not only consecutively, but intermittently, inasmuch as it is possible that spermatozoa may be absent at the time of any one given examination, supposing only one to be made.

Among other neurotic symptoms, the patient will complain of a *shortness of breath* with *wheeziness* (asthma sexuelle, Peyer), but genito-urinary surgeons are apparently not yet agreed whether to regard this symptom as the result of spermatorrhœa, or as a consequence of sexual abuse (Tano). It may be associated with *palpitation* of the *heart*, *cardialgia*, and a feeling of *faintness*, simulating somewhat cases of angina nervosa. I am strongly inclined to doubt if these symptoms can be regarded as due to the seminal loss. They are much more frequently found in patients the subjects of diurnal pollutions, in whom there is marked nervous and physical debility, and I believe that they are owing much more to the debilitated condition of the patient and to his neurasthenic condition than to his spermatorrhœa.

Another symptom which has been laid at the door of spermatorrhœa is *loss of memory* which Acton regards as a not infrequent result of this disease. Here, again, I believe, is another instance where the consequences of one disease have been mistaken for those of another, for although I am willing to admit that mental weakness and hebetude may sometimes follow upon seminal pollutions, I do not believe that loss of memory can be ascribed to spermatorrhœa, for my experience with patients suffering from this class of disease teaches me that they are intel-

lectually as capable as persons who do not suffer from this malady. Nor, as a rule, are they hypochondriacs.

The *sexual powers* of patients affected with spermatorrhœa are, generally speaking, *not weakened, nor* are such persons *impotent*. The capacity for coitus in nearly all of them is fairly good, depending somewhat upon the time of life which the victims have reached; the sexual appetite is normal or very nearly so, and many a man suffering from spermatorrhœa is capable of and indeed does produce offspring. Of course if the sufferer has reached advanced life, his powers of copulation are not as good as they were in his younger days, but that, alas! is the penalty one pays for growing old; the libido sexualis becomes blunted, but even in such cases the patient admits his erections are normal, he is capable of effecting an entrance, and the emission is not premature; in short, the results are fairly gratifying. Indeed, the difference in this respect between the sufferers of diurnal pollutions and of spermatorrhœa is very marked.

Prognosis.—The prognosis in cases of spermatorrhœa is better or worse, according to the age of the patient, to the physical or mental results which are produced by the disease, and to the variety of the disease present; whether occurring at stool or on urination. Peyer states that the prognosis is usually better in this class of disease than it is in pollutions, and denies that the lamentable cases which Lallemand pictures are of frequent occurrence, or that they are even the rule, although he admits that they may occasionally occur. The prognosis is also more favorable when the seminal loss occurs at stool than when it takes place after micturition; and where sexual power is retained the prognosis is also more favorable than in those patients where the power of copulation is either entirely or partially lost (Tano). Thus, Tano gives the

history of 26 patients affected with spermatorrhœa who were under his care. In 17, or 65 per cent., of them, entire recovery took place. Nine were uncured. In 16 of these 26 the spermatic loss occurred during defecation, and of these 16, 12, or 75 per cent., were cured. In 10 of the "mixed" form, as he calls it, that is, where it occurs during micturition and while at stool, only 5, or 50 per cent., were cured. In cases where the capacity for sexual intercourse remained good, the prognosis was also more favorable than where the opposite obtained; thus, 14 out of the 26 were *capaces coiere*; of these 14, 12, or 85 per cent., were cured; and of 12 who were impotent, only 7, or 58 per cent., were cured.

Where the patient is of sound bodily and mental constitution the prognosis is as a rule good, but it is bad in such as are subject to hereditary neuroses, or who are affected with a constitutional weakness of the genito-urinary organs, as is shown by their early habits of bed-wetting and by their extremely nervous condition; who are unable to endure any fatigue or to undergo any great exertion, either mental or bodily, and in whom the nervous symptoms very largely predominate; and the prognosis is worse where the disease occurs without any apparent cause to account for it. Hence, while admitting that the majority of patients with spermatorrhœa entirely recover, it must not be forgotten that there is a certain proportion of men in whom the spermatorrhœa seems to be dependent upon constitutional and nervous conditions rather than upon local ones, and that it is in these cases that the prognosis is the most unfavorable.

As regards the treatment, the first thing is to discover the cause of the spermatorrhœa. If it has been due to intemperate habits of masturbation and the consequent irritation and inflammation of the urethra, or to exces-

sive indulgence in sexual intercourse or to the bad practice of withdrawal, the first step will, of course, be to stop these habits, before any improvement can be hoped for or expected, and then the local treatment, which will be described in the next chapter, when I come to write of pollutions, etc., will be of service in these cases of spermatorrhœa. The same hygienic precautions and attention to diet, including drink as well as food; abstinence from drastic purgatives or irritating clysters, etc., should be as carefully observed in these cases of spermatorrhœa as they are in cases of pollutions. The use of tonics may sometimes be of service, and atropine, nux vomica, ergot and its alkaloid, cornutine, have all been lauded in the treatment of this disease, but in *spermatorrhœa*, as in *pollutions*, there is *no specific*. Electricity may also be tried under the forms of the faradic and the galvanic currents, and of the two, I prefer the latter. If it be used, the positive pole should be placed on the spinal column and the negative in the urethra, on the perineum or the spermatic cords.

In the domain of hydrotherapy, the use of cold or hot sitz baths, sprays, douches, surf and still sea bathing may all be of benefit, but the principal and most important treatment is the local method. This consists in the passage of metal sounds, which should be used two or three times per week and left in the urethra from five minutes to a quarter of an hour, and the use of Winternitz's urethral or Wiener's rectal psychrophore with cold or hot water, and finally the local application of stimulants, such as silver and copper, or astringents such as zinc or tannin, made to the deeper portions of the urethra through the endoscope. In using these forms of medication care should be taken that they are not too strong, in order to avoid the possibility of cicatrices forming strictures

(Peyer), but it may be remembered the urethra will often tolerate much more active medication than it has generally been supposed capable of enduring.

The value of instruments to be worn I have found to be comparatively negative, although Trousseau has highly lauded the instrument that passes under his name. In this country their use has practically been abandoned as provocative of irritation without any consequent good supervening.

Coitus.—The question often arises in the treatment of this class of diseases whether sexual intercourse should be allowed or interdicted, and the advice which is oftentimes given is vague and conflicting, because the majority of surgeons do not draw a proper distinction between spermatorrhœa and diurnal pollutions. Some advise that coitus should be practised in moderation, while others taboo it entirely, and which is the best advice to follow depends a great deal upon which disease is under consideration. In most cases of spermatorrhœa I believe that not only may coitus be permitted, but it is frequently beneficial, for we find that the patients are perfectly capable of intercourse, there is nothing the matter with their sexual capacity, and where copulation is temperately indulged in not infrequently the leaking and loss of semen are much diminished, and may even disappear for some days after connection has been indulged in. While this is true of spermatorrhœa, it is not so of pollutions, as we shall find when we come to speak of diurnal pollutions; in that variety of disease indulgence in sexual pleasures should be absolutely prohibited.

Castration.—In the chapter devoted to masturbation I discussed the advisability of performing castration upon a certain class of persons subject to that disease, and certainly while exercising the utmost caution and even repug-

eficial effect. Years passed away, until he was thirty years of age, when he sought and found a location in the city of Cincinnati, in a book store.

"While there he applied to some of the leading physicians, but all their prescriptions were powerless to help his condition. Cauterization of the membranous portion of the urethra was performed, and Lallemand's treatment followed strictly. He returned home, obliged to give up his clerkship (which he was much attached to, for he was fond of books, and it was remarkable how well he educated himself by reading), giving up in despair all hope of recovery.

"At about this time I first saw him. He was much emaciated, an indescribable restlessness haunted him, fluid semen discharging, once, twice, or three times during sleep. He had in a well written letter to our distinguished surgeon, Dr. Russell, of Mt. Vernon, appealed for surgical aid, castration, or any remedy he would advise. The doctor sent him a prescription, and reflected somewhat on his morality, telling him to leave off the cause, take the prescription, and he would recover. He appealed likewise to my friend, Dr. C. C. Hildreth, of Zanesville. He never had erections in his life, nor did the ejaculations of semen produce the least sensation approaching orgasm.

"Possessing naturally a bright intellect, and having devoted himself to reading, it was pleasing to note his fluency of speech and good command of language; and when I told him the experimentum crucis was castration, he made one of the most beseeching and eloquent appeals I ever heard from a poor distressed mortal. The next day I called, accompanied by my friend, Dr. Lemert; administered chloroform, and after the operation of castration had been performed, and the patient passed from the influence of the anæsthetic, he felt cheerful, and the prospect of

recovery made him quite satisfied with his emasculated condition. Next day my friend, Dr. Lemert, visited him, and gave this singular account of his ejaculatory muscles: About 4 o'clock, while in a dreamy state, the 'muscles went through the motion,' as by habit, a small discharge following. The day following I visited him, and he told me the same thing occurred at precisely the same time. We visited him alternately for two weeks, when everything seemed favorable for his recovery. A year elapsed when the sans-testes patient came into my office looking well, and happiness complete, with the exception of a little cloud that he wished dispelled. Since the loss of the testes and his rapid recovery of health and strength he was now 'troubled' with vigorous erections, coupled with a desire for female society. These conditions had been strangers to him all his life until now. He entertained the idea of matrimony. A young maid he had in view whom he knew was pleased with him. I told him to deceive no one, but first tell of his physical deficiency. He did so, and was accepted on understanding grounds—was married. And now eight long years have passed away, and if there are any bickerings and dissatisfactions, the neighbors are 'none the wiser'; but of whatever responsibilities they have to bear, there are none in infant human shape. They had fully resolved that progeny should not be a *sine quâ non* to matrimonial felicity, and they are now living witnesses to the fact.

"*Remarks.*—This patient, whose history I have rapidly sketched, was religiously inclined from his early childhood until the time of his trouble—was healthy and bright in mind. No person, for a moment, who would have seen and conversed with him at the time of his sore affliction, and having his denial, would have accused him of bringing on his abnormal condition. (A caution to medical men

who jump at the conclusion that there is only one cause for spermatorrhoea.) Remarkable that this man, who, all his previous life, was lost to virile power, should, when emasculated, have venereal propensity. All physiologists revert to sperm as the controlling and exciting cause of such animal propensities; but when sperm is *non est*, and especially its absence restores a lost tone, this is unrecorded and unaccountable."

**POLLUTIONS:
NOCTURNAL AND DIURNAL.**

CHAPTER VII.

POLLUTIONS: NOCTURNAL AND DIURNAL.

Definition.—In taking up the question of seminal pollutions, I shall divide them into two classes, viz., those which are nocturnal (night emissions, wet dreams), and those which are diurnal (emissions occurring during the waking hours), and of these two the latter of course is the more serious, as it assumes a tendency to pass over to a chronic condition, which is often, but improperly, confounded with spermatorrhœa.

Frequency.—Every healthy male adult, from the age of puberty to sometimes quite an advanced age, past sixty years (Acton, Frank *) is subject to occasional seminal losses during sleep, which may vary in frequency from once in two to once in eight weeks (Peyer), from once to twice a week to once in two or three months (Paget); but in this feature, as in almost everything else connected with sexual matters, no hard and fast rule can be laid down, and the same procedure must be followed with regard to these nocturnal emissions that was suggested when the question of sexual intercourse was discussed, to wit, that so long as a feeling of well being, a sense of satisfaction and of mental and physical relief is experienced, the nocturnal emissions are perfectly healthy and physiological, no

* Fürbringer states that the youngest age at which pollutions (presumably nocturnal) have occurred in his experience is eleven years. The latest age at which *diurnal* pollutions have occurred was seventy-two. This happened in the case of a nervous widower who suffered from pollutions with orgasm but without erection.

one emission occurs it is usually followed by another immediately or shortly after the first, sometimes by a third or fourth, and this condition is not necessarily pathological but may be perfectly normal and physiological, because it is highly probable that both sides of the sexual apparatus are not emptied at a single emission, so that the frequency of the emissions will depend very largely upon the retentive capacity of the seminal vesicles and of the other portions of the sexual organs, as well as upon the ardor and violence of the man's sexual appetite. Peyer goes still further, for he writes that robust and strongly built young men who, having been accustomed to moderate coitus, are suddenly deprived of this refreshment, may suffer from nocturnal emissions two or three times *per noctem* for several nights running. Provided, however, no depression nor mental and physical lassitude ensues, no harm results from this seemingly lavish expenditure of semen. The fact, therefore, that several emissions occur consecutively is no cause for alarm, provided always that the patient does not feel debilitated after them. But on the other hand, it must also be remembered by the surgeon that, although a man may normally have frequent and abundant seminal emissions, it sometimes happens that their number becomes so frequent as to constitute a pathological condition.

Besides this source, which is due to reflex action from mechanical causes, I also believe that not infrequently nocturnal emissions occur in consequence of *nervous impressions* originating in and transmitted from the brain or spinal cord and reacting upon the sexual organs. This is exemplified by the fact that nocturnal emissions often occur after a man has spent the preceding evening in female society where there has not been the slightest suspicion of any wrong-doing and where there has been nothing

to particularly excite sexual ideas or passions in him, and the same is also true in not a few instances where the man has indulged in alcoholic potations over night, albeit they may have been very moderately and sparingly used. Thus *cerebral* or *spinal stimulation*, as well as *congestion of the sexual organs*, may be active predisposing causes toward nocturnal emissions.

But pollutions may also be produced by *pathological* conditions. If a man's passions are aroused by the sight of a well turned ankle or a buxom leg; by riding in cars in close contact with women, although without any attempt at familiarity or desire to excite an orgasm; by tight fitting or very warm clothing, notably trousers; if the motion produced by riding in a carriage, on horseback, or a bicycle is attended by a pleasurable sensation, accompanied by a more or less complete erection ending with a seminal discharge, then the condition is a pathological one, and these cases we are in some doubt how to classify, for although they bear some resemblance to spermatorrhœa, yet they can hardly be classed with that form of disease, inasmuch as they are attended with nervous and physical symptoms which do not usually occur in the latter affection.

In cases of *diurnal emission* there is usually an *erection*, more or less perfect, whereas, in *spermatorrhœa*, the *erection* is generally entirely *absent*.

Besides these instances which have been given, pollutions may follow as the result of *spinal irritation*, *congenital weakness* of the *sexual organs*, *chronic inflammation* and irritation of the *colliculus seminalis* and the opening of the *ejaculatory ducts*, *masturbation*, *sexual excess*, *withdrawal*, and non-emission of the semen during coitus, *stricture of the urethra*, *chronic inflammation* of the *neck of the bladder*, *acute and chronic prostatitis*, *acute and chronic vesiculitis*, *hypertrophy of the prostate*, a *long and tight prepuce*,

rectal and anal irritation arising from *piles*, *fissure* or itching of the *anus* from eczema or other causes, *ascarides*, *constipation*, *chronic diarrhœa*, the intemperate use of irritating *clysters* (Frank), by *beating* the *buttocks* with a rod or switch, *riding* in a train or carriage, on horseback or the bicycle, *nervous debility* with or without *neurasthenia*, *drastic medicines* and drugs which produce irritation of the genito-urinary tract, as cantharides, etc., and very rarely *irritating urethral injections* (Peyer). It is probable out of this long list of causes which are supposed to produce pollutions, that the majority have really little to do with causing emissions, unless there be an underlying pathological condition either of the nervous system or of the sexual apparatus, and it is sometimes difficult for the surgeon to determine what is the real pathological factor in many cases of nocturnal or diurnal pollutions. I incline to the view that the larger proportion of them is associated with and dependent upon a local origin, which, however, from its long continuance and from the mental disturbance which it produces, ends in an attack of neurasthenia, and for that reason it is so difficult oftentimes to decide as to whether a given case of pollution should be ranked as a neurosis or whether it should be classed simply as due to local irritation.

Now, it is readily conceivable why erotic thoughts or toying with women may produce violent sexual desires in healthy men, but it is not conceivable why in a normal condition of health diurnal pollutions should follow unless there is some pathological cause to account for them. Riding in cars with women, even if the contact be close, should not in the healthy man produce anything more than a passing erection and then only when the man's imagination is allowed to run riot. Nor should compression or kneading of the perineum between the thighs while sit-

ting, or friction of the former while on horseback or while bicycle riding, provided the saddle is properly fitted to the man's breech, produce anything more than temporary irritation; but where it goes on to produce an emission it is very clear that there is something fundamentally wrong either with the man's genito-urinary apparatus or else with his spinal cord, and in my experience it is more frequently the former than the latter which is at fault.

I have already, when speaking of masturbation in another part of this work, alluded to the influence that climbing poles and trees and sliding down banisters have been supposed to exercise upon the genital organs of healthy boys, and I then took occasion to express my dissent from the views of those writers who regarded these exercises as causative of this vice. But if an irritation of the deeper parts of the urethra exist, occasioned, as is frequently the case, by previous habits of masturbation, then the stimulation produced by these gymnastic feats may possibly induce an emission, for I believe that the diseased condition of these sexual parts is the true cause of the emissions, and that the exercise must be held blameless of the charge of inducing masturbation. The same is true where pollutions have been believed to be caused by compression and kneading of the perineum and by friction of a saddle, whether it be on a horse's back or on a bicycle. The pollutions will not occur if the urethra or the spinal cord of the subject are healthy; where they are not, then emissions may very likely be induced.

As to the part that *sexual excesses* play in producing seminal pollutions I am exceedingly skeptical, and share the opinion of Vecki, who says that he has never known them to produce seminal losses. Indeed, he goes so far as to deny the likelihood of their ever being the cause of pollutions.

In addition to these causes, it has been stated that convalescents from *acute febrile diseases* very frequently suffer from both nocturnal and diurnal emissions (Peyer). It is possible, but I believe its occurrence is highly improbable, except in those cases where the patient has been a chronic masturbator, or where he has indulged previous to his illness in frequent or intemperate coitus. Under such conditions it is quite likely that emissions may occur, but otherwise, I am exceedingly skeptical about those instances which have been recorded where emissions have been said to occur spontaneously during convalescence from typhoid fever and pneumonia. I am equally unbelieving as to those cases where *pollutions* are said to occur in the first stages of *phthisis* (Hanč et alii *), and where they do occur, I believe it is because the sexual organs have been attacked by tuberculosis; that there is a local cause, therefore, for the irritation, and that the pollutions are not in consequence of the phthisical debility or emaciation. In these instances the surgeon should look carefully for the presence of the tubercle bacilli in the seminal discharges or in other secretions from the sexual organs and also in the urine, for not infrequently the bacillus will be found in the secretion from the kidneys, as well as in the seminal discharges.

Of all the causes which produce this condition, *masturbation*, I believe, stands in the front rank. Where this habit has been prolonged and practised to excess, an irritable condition of the prostatic and membranous portions of the urethra is induced, attended by marked congestion of the mucous membrane of these parts, and the slightest subsequent irritation is sufficient to produce an emission; indeed, merely the pressure of the clothing upon the perineum in sitting will often do the same. *Onanism* (coitus

* In Hanč's case the history of phthisis is by no means convincing.

interruptus), retention of the semen and prevention of the orgasm (coitus imperfectus) will also produce like results, the reason for which is identical with the effect of masturbation, to wit, a congestive irritability of the deep urethra.

It has been a disputed point whether *horseback riding* is capable of producing seminal emissions with or without erections, some writers stating their disbelief in the possibility of this occurrence (Curschmann). Lallemand states that they can be so produced, but in the case which he quotes it is worthy of note that the young man who was the subject of this disturbance had been an ardent masturbator. Presumably his urethra was in a state of extreme irritation and, this condition granted, it is readily conceivable that the slightest friction would bring on an emission. Hanč gives the history of a young man twenty years of age, in ordinary good health, innocent of sexual or other excesses, who, in consequence of horseback riding, had on one occasion a sensation of sexual desire without erection or emission, on another occasion, erection without emission, and on a third, sexual desire, erection, and emission. Examination by the sound showed nothing beyond intense hyperæsthesia of the prostatic urethra. Some slight phosphaturia was present. Frank relates the case of a man of sixty, who, while driving on a rough and stony road, had an emission which Frank recognized to be semen from its color, odor, and consistence. It was apparently not examined by the microscope. Hammond, in discussing the production of the *mujerados* among the Pueblo Indians, gives as one of the performances, repeated and continuous horseback riding in conjunction with furious masturbation, which by inducing frequent emission, ends in atrophy of the penis and testicles with practically emasculation of the unfortunate man. It may

be fairly questionable whether in these cases the furious masturbation should not be properly regarded as the chief cause of the unsexing of these men, and not the repeated and continuous horseback riding. I have myself seen quite a number of cases of diurnal pollutions induced by long and continuous riding of horses and bicycles, but in all these instances, I have been able to discover the existence of a previous debility of the genitals, induced either by masturbation or by excessive sexual indulgences. I have, however, more frequently observed among bicycle riders and cavalrymen, instances of sexual weakness and inability to perform the copulative act with their pristine vigor and enjoyment than of diurnal emissions, but when I have been consulted about these latter diseases in such persons, I have been able to trace the cause to some antecedent urethral complication.

Another frequent source of pollutions is the presence of an *urethral contraction*, especially of the kind known as the irritable stricture, and the deeper down in the canal it is situated, the more marked are the tendencies to pollution (Zeissl). In these instances it seems to act as a foreign body would in producing constant irritation, inclination to urinate frequently, a feeling of fulness in the urethra, a desire to rub the genitals (a procedure by no means conducive of benefit to the parts), and occasionally a sensation as of an imminent orgasm. Of this variety I have seen frequent examples.

To produce a seminal loss it is not necessary, however, that the stricture of the urethra should be deeply seated in the canal, for a congenital *narrowing* of the *meatus* has been found to be provocative of pollutions (Hicquet), and the same is said to be true with regard to congenital *shortness* of the *frenum* (Heulard-Darcy).

Besides these urethral causes, Genaudet gives the his-

tory of a patient who came under his care for diurnal pollutions for which no other cause could be assigned than the presence of a *polypus* in the deep portion of the canal, for upon the accidental removal of this growth on withdrawing Lallemand's porte-caustique which had been used to cauterize the prostatic portion of the urethra, the pollutions ceased.

It is open to question whether *gonorrhœa* may sometimes be an active agent in producing seminal emissions, diurnal or nocturnal. During the early stages of a clap my experience leads me to the belief that seminal emissions are not of more frequent occurrence than normal, but at or about the third or fourth week, or even later, when the inflammation has extended to the membranous and prostatic portions of the urethra, I have seen some cases where the nocturnal pollutions have been more frequent than they usually are in a healthy condition, and in a few instances the semen has been tinged with blood (*hæmospermia*). Such accidents are, however, I think, comparatively rare, and I certainly do not share the view held by Liégeois that *gonorrhœal epididymitis* is a fruitful source of *nocturnal emissions*. I have spoken in the preceding chapter of the influence that *chronic gonorrhœa* plays in *spermatorrhœa*.

Oxyluria is another of the causative agents which have been supposed to play a part in producing pollutions (Dickerman). Curschmann thinks Dickerman has confused cause and effect, but on reviewing the case as reported by Dickerman I incline to adopt his (Dickerman's) opinion. The case occurred in a man twenty-eight years of age, who was neither a masturbator nor one addicted to sexual excesses. The symptoms were great mental weakness of several months' duration, accompanied with a dull pain and sense of uneasiness in the occiput. Seminal emis-

sions were profuse, and micturition was frequent, being associated with irritability of the neck of the bladder. Examination of the urethra with a sound revealed hyperæsthesia of the neck of the bladder and of the prostatic urethra. There was also great emaciation. The urine was milky and contained a tenacious gelatinous substance. The microscope showed an abundance of spermatozoa and crystals of the oxalate of lime. The treatment consisted of the internal administration of dilute muriatic acid, and in two weeks' time recovery ensued, the seminal emissions ceased, the urine returned to its normal condition, and there was no relapse.

Although such a case of pollutions is exceedingly rare it is difficult to avoid considering it as dependent upon irritation of the prostatic urethra due to oxyluria.

Lallemand has asserted that *continence* is a not infrequent cause of pollutions. If by this he means simply nocturnal emissions, his dictum may be accepted within certain limitations, but if he implies that sexual continence is a cause of diurnal pollutions or of spermatorrhœa, as I gather he does from reading his book, then exception may be taken. In all men, continent or otherwise, I believe emissions occur during a large period of their lives as a perfectly physiological condition, and, as already has been stated, if no manifestations of depression, physical or mental, ensue, no injury results to the person, and this entirely irrespective of the number of emissions and the amount of semen ejaculated. I believe that pollutions are much more likely to occur and do occur more frequently in the semi-continent and profligate than in the continent—and by this word I mean just what Acton claims for it—pure in mind as well as in body; for men by constantly thinking about women and about having sexual intercourse with them, may excite and inflame themselves to the point of

having nocturnal or even diurnal pollutions as surely as if they toyed or fornicated with them; indeed, this is done perhaps more frequently than many medical men suspect; as witness what Hammond says of men who have "mental sexual intercourse." I have been told that the name they know themselves by is "mental masturbators." But I should hesitate a long time before believing that continence produces the disastrous consequences which Lallemand pictures in his work in the shape of unconscious diurnal pollutions and spermatorrhœa. This point I shall refer to again at greater length in the chapter on impotence.

Another condition ascribed by Acton as a cause for nocturnal emissions is the *second sleep* to which some patients are addicted. He says: "No doubt can exist that emissions most frequently take place in this second sleep; and although a man awakes thoroughly refreshed from his first sleep, he may arise after taking a second doze thoroughly prostrated." I am not able to agree with the late Mr. Acton in his opinion, for on inquiring of patients as to the time when their emissions have taken place, I have found that they occur at any time during the night, with perhaps a slight tendency to greater frequency toward morning, but not before they have awakened, and certainly not at the time of a second doze.

Physical reasons are not the sole causes for diurnal emissions. *Psychical* reasons play their part, sometimes a very important one. Thus a sudden *fright* or a great terror will produce them (Curschman); *nervousness* or a state of intellectual tension (Hanč, Davila ex Kaula, Krafft-Ebing, Moll); *chagrin* under censure (Davila ex Kaula), and Boerhaave quotes on the authority of Zimmerman an extraordinary instance where a diurnal pollution occurred in a man on hearing news that his *property was to be sold* (Pickford).

Ingesta also play a rôle in the production of pollutions; for example, *alcohol* even when used in moderation, will induce nocturnal emissions in healthy men, and where there is a tendency toward urethral irritation (particularly is this true in masturbators) there is also a likelihood of the pollutions being diurnal. *Beer* and strong *ales* are frequent causes of pollutions, and patients have sometimes told me that a few glasses of beer will induce a desire for sexual intercourse which if not gratified is apt to be followed by a nocturnal emission. Lallemand and Hanč both lay stress on the power of alcohol to excite pollutions, and the latter goes so far as to say that "in moderately large doses it stimulates not only the intellectual but the sexual faculties, and in some instances produces erection with an emission on mere sexual contact with the opposite sex, but in nearly all of these cases there is some disorder of the deeper canal."

Lallemand and Gueillot also mention *coffee* as provocative of seminal emissions from its action as a cerebro-spinal irritant, but my experience leads me to regard it of specially injurious effect only where deep-seated irritation of the urethra exists either in persons who masturbate excessively or who indulge intemperately in sexual congress. Where the urethra is in a *normal* condition, I do not regard the ingestion of coffee as necessarily detrimental to the sexual functions, although I believe it tends to congest the pelvic organs.

Gueillot's case was that of a man in whom nocturnal pollutions were said to have been induced by the use of coffee, but it should be noted that in the history it is stated this man had been in the habit of taking a *chasse* of brandy after his coffee, and to my mind it is an open question as to how much the nocturnal emissions were due to the brandy and how much to the coffee; indeed, I

incline to the belief that the brandy was more responsible than the coffee, for we know that in many subjects the use of alcohol in the evening, or even a short time before going to bed, will not infrequently produce nocturnal emissions.

Drastic purgatives will also, if used intemperately, induce pollutions; this is especially true of aloes, which seems to have a peculiarly irritating effect upon the rectum, perhaps from a tendency it has to induce hemorrhoids, and these, as has already been noted, are often provocative of emissions. Perrin gives the notes of a case where nocturnal pollutions were brought on by cauterizing *internal hemorrhoids*.

Symptoms.—The symptoms in cases of pollutions vary considerably, according as they are nocturnal or diurnal. In the former the patient informs the surgeon that he has, without any known cause, been suffering from nocturnal emissions attended with erection of the penis accompanied by erotic dreams which have *awakened him*, when he finds that his night clothing has been wet by the seminal discharge. This has perhaps occurred three or four nights running, and occasionally two and sometimes three emissions have occurred during a night. The patient is much alarmed at this condition of affairs, and seeks medical assistance for relief of these symptoms. Upon inquiry the surgeon will usually discover that the patient has been in the habit of indulging in sexual intercourse, and that this, for some reason or other, has been interrupted; or else that the man has been in the habit of masturbating and has made an attempt to check the habit. The surgeon's advice will depend a great deal upon whether, after these emissions, abundant and frequent as they may appear to be, the patient's health suffers in consequence. The patient after these seminal losses feels no sense of

debility, no physical or mental relaxation, is able to attend to his daily duties as well and as promptly as heretofore; if his emissions have been attended with a sense of comfort and relief rather than the contrary, and if the patient's build be that of a person in good health, and if he be of robust constitution, the surgeon may reasonably assure him that, frequent as they have been, the emissions are by no means pathological; that there is no real cause for alarm; that men frequently suffer from nocturnal pollutions from the sudden checking of a practice which has become continuous and habitual, and that if he will calm his mind and pay no attention to his trouble, it will pass off, and in the majority of instances such will prove to be the case. The mental anxiety and worry, which is a marked feature in these cases, is of more consequence than the loss of semen, and if the man can be persuaded that no harm will result, the surgeon will probably hear no more from his patient.

But it occasionally happens that the person presenting himself is of weak and delicate constitution and one in whom the nervous element predominates. The patient reports that the emissions which occur during the night have been, so far as he knows, attended with *no pleasurable sensations*; that he is *not conscious* of any seminal loss; it is only when he awakes in the morning that he finds the penis flaccid or semi-erect, and but for the evidence on his night-clothing he would have *no positive proof* that an emission had taken place. Moreover, he complains of *headache* or of *dull pains* in the *head*, he is *languid* and unable to concentrate his attention upon his business, there is a feeling of *muscular lassitude*, a *loss of appetite*, he has a *bad taste in his mouth* like old, rotten cheese (Peyer), he reports a feeling of *smarting* and *burning in the eyes*, in fact, the symptoms are practically those of

nervous debility. Indeed, there is often reason to apprehend that trouble, if not already present, will sooner or later ensue either in the nervous system or genito-urinary tract. Upon examining more closely, the surgeon will find that the patient complains of more or less *smarting in passing water*, of an *irritable* condition of the neck of the bladder, prompting him to urinate more frequently than usual, *shooting pains* through the bladder and testes, *hyperæsthesia* and *paræsthesia* of the penis and urethra more or less irritability throughout the sexual organs with *partial* and *incomplete erections*, and perhaps the patient will inform the surgeon that when he has *attempted coitus*, it has *been a failure from poor erections* and from *premature emissions*. The man, furthermore, will inform the surgeon that the *urine is turbid* and that there are *spermatozoa floating* about in it, and upon the patient being required to pass water before the surgeon the urine will be found to contain shreds of mucus and epithelium derived from the deep portions of the urethra. The *urine* is sometimes *increased* in amount and when it is, is generally *light in color*; otherwise it is normal in quantity, the *turbidity* which is present in some cases being due to the heavy deposit of phosphates and mucus (*phosphaturia*). Occasionally *sugar* and *albumin* are found in the urine (Peyer).

Upon examination of the *penis* this latter organ will be found *shrivelled*, and the patient will possibly volunteer the information that it is *smaller* than normal, and is *cold* to the touch. The *testicles* hang *low*, are *soft* and feel *flabby* to the touch, and not infrequently accompanied by a *relaxed* condition of the *scrotum* and by *varicocoele* of the cord.

The nervous symptoms detailed above, especially the heaviness of the head, depression of spirits, etc., in the early stages of the disease are more marked upon rising,

disappearing in the course of the forenoon; but as the disease progresses these symptoms last longer during the day and may either disappear toward evening, or, if the disease becomes worse (and this is more marked in diurnal pollutions), they linger throughout the day, becoming more and more severe and intense, and finally develop into a condition of neurasthenia. These are the cases in which nocturnal pollutions are injurious and demand surgical interference and treatment, nor is the injury dependent either upon the frequency of the pollutions nor the amount of semen that is lost. There is an underlying cause dependent upon some nervous affection of the cord, of the brain, or of the genito-urinary tract, and although it sometimes happens that this latter is the only source of trouble in the majority of cases, there is a neurotic condition attending the disease which demands attention and which should not be overlooked.

Hamilton, of New York, has called attention to the relation between *nocturnal epilepsy* and *seminal emissions*, but in his cases the emission did not take place in the usual manner, *i.e.*, externally, but the semen was *ejaculated backward into the bladder*, so that in the morning there were none of the tell-tale marks usually found upon the night shirt. He narrates that his patients who were adults and not apparently given to sexual abuse in any way, would wake in the morning with a feeling of exhaustion, headache, and weariness, while in other subjects there would be symptoms of *epilepsy* with the external appearance of *great fatigue*. No explanation could be given for this extreme exhaustion, and hence no proper line of treatment could be instituted. For some reason Hamilton suspected the possibility of nocturnal emissions taking place, with a concomitant attack of epilepsy, and that the ejaculation was sent backward instead of forward.

Examination of the first urine passed in the morning and continued for some time, showed frequent evidences of spermatozoa after some of these exhausting nights. These nocturnal emissions were not necessarily attended with any voluptuous sensation, and it was very rarely that the patient remembered anything about them. Occasionally, however, he would be waked up by a sensation of local muscular contraction and throbbing in the perineum and in the lower abdominal region. Occasionally there would be an attack of diurnal epilepsy. In one of the patients Hamilton says that a fresh tongue bite furnished corroborative proof of the epileptic attack.

These are singular cases and somewhat analogous to the somnambulistic attacks of masturbation already alluded to in the previous pages, only in these instances the possibility of making a diagnosis was rendered still more difficult by the fact that there was retro-ejaculation of semen, and it was apparently only from the sense of exhaustion, headache, and weariness, and the fact that no remedies addressed to the epilepsy alone produced any results, which induced Hamilton to suspect the possibility of this. At least I so judge from reading his paper. I have never seen any such cases; or if I ever have seen them I have not connected the epileptic attack with the possibility of a seminal pollution, and it will be interesting to learn if others have seen similar instances, now that attention has been called by Hamilton to the possibility of such occurrences.

As the disease goes on and becomes worse, the patient complains that not only does he lose his semen during sleep, but he also notices upon the slightest degree of irritation—such as looking at pictures of women in the nude, sometimes even thinking of naked women, friction of the genitals against the clothing, and many of the other causes

detailed when speaking of the etiology of this affection—that there is a *loss of semen* during the *daytime*, sometimes attended with a *flabby erection* and the most *trifling* amount of pleasurable *excitement*, sometimes without either of these accompaniments, and the *loss* may be from a *few drops* to a *teaspoonful* at a time. If this discharge be microscopically examined it will usually be found to contain spermatozoa, as a rule few in number and dead, or, if not actually dead, of very feeble motion. At other times the discharge may be devoid of spermatozoa, but if so the conclusion must not be reached that it is not seminal, for if the emissions have been pretty frequent and continuous, the testes, vesiculæ seminales, and vasa deferentia, in which these bodies are usually found, have been drained of their contents, and hence no more fluid leaks away, but if the pollutions cease for a time, spermatozoa will be again found in the discharges on the renewal of the emissions.

The *urine* in these cases is similar in appearance to what has already been mentioned, except that the *deposit* is usually *thicker*, more abundant, and the urine is then very seldom light in color or increased in quantity. It may be of the normal amount or a little below the normal; when first passed it is *cloudy*, clearing as the sediment drops to the bottom of the vessel. Occasionally the patient may say that the *last few drops* that escape him are *milky*, *thick*, and entirely different from anything that he has seen before.

In addition to this physical exhaustion, the patient suffers from a *lack of nervous force*. His *will* is gone, he is incapable of forming any decision or of adhering to any plan for five consecutive minutes, he cannot fix his mind upon any train of thought or work, he finds his *memory* is *defective*, he experiences *difficulty* in articulation and thick-

ness of speech, he complains of a sense of burning and tingling at the end of his tongue, his taste is impaired, he has continuous pain in his back, in fact, feels as though he were going to pieces. In some of the worst cases the patient suffers from epistaxis without any apparent cause, attended with an abundant and offensive catarrhal discharge from the nose and salivation (Peyer), his eyes smart and are affected with muscæ volitantes, his vision is indistinct and vacant, associated with defective accommodation and with mydriasis, which is frequently unilateral (Peyer). He is disturbed by tinnitus aurium, partial deafness, and temporary hyperæsthesia of the auditory nerve. His breathing is wheezy and asthmatic, he suffers with a constant, short, hacking cough, he has cardiac palpitation and intermittence in the action of the heart and pulse with precordial pain, a feeling of suffocation, and occasionally he suffers from angina pectoris nervosa (Peyer). The stomach and bowels are also affected, and atonic dyspepsia with eructation from the stomach, attended with regurgitation of food and acid fermentation makes its appearance. He is constantly hungry and yet always feels empty, his food does not seem to satisfy him, he is affected with nervous diarrhæa alternating with constipation, he has pain in his bowels due to gaseous distension, he suffers from borborigmi, flatulence, and not infrequently with neuralgic tenesmus of the bowels. His anus itches constantly, and there is more or less marked sensation of moisture about the parts. His muscular system also suffers. He has constant aches and pains all through his body, simulating rheumatism, the slightest exertion induces fatigue obliging him to sit or lie down, and when he attempts to rise his muscles become stiff and for a short time act with difficulty. The unfortunate wretch still further suffers from spinal irritation, as shown by formication

along the spinal column. Five per cent. of these cases, according to Lallemand, are so affected. He has *numbness* along the *spine, fingers, and toes*, fugitive in character, and occasionally, but very rarely, an attack of *aura epileptica* supervenes (Peyer). *Formication* of the lips, tongue, and forehead also occurs with loss of sensation in the parts, and rarely there is *hyperæsthesia* or else *anæsthesia* of the *skin* (Peyer) with a feeling of prickling and tingling over the body, as if the patient had an electric shock. Sometimes he has *hyperhidrosis*, which may either be general or local, and Peyer mentions localized *œdema* as a possible but rare event. It is a matter of belief with many that diurnal pollutions may, when they increase in intensity and continue for a length of time, pass over into spermatorrhœa, but this view I believe to be erroneous, as I have already stated, because in diurnal pollutions, of which the foregoing symptoms have been detailed, the spermatic discharge is not constant, it does not dribble away at stool and seldom during urination; there is more or less normal erection, points which mark the distinction which exists between cases of diurnal pollution and spermatorrhœa.

Whether pollutions, if long continued and excessive, can induce *mental disturbance and alienation* is a question fraught with much interest to medical men and of great importance to the unfortunate victims of this form of disease. Nearly all alienists and authorities on nervous diseases whose writings I have consulted are inclined to assert with more or less positiveness that these disorders may induce mental disturbances, but most of the cases reported have occurred in persons in whom pollutions resulted as a consequence of intemperate and ardent masturbation, and it is therefore open to question in my mind how far the psychic disturbances should be laid to the

all cases of nocturnal pollutions is favorable. The larger proportion of men affected with this variety of disease is more frightened than hurt, and really need little more than sound advice, medical instruction, and kindly encouragement to produce an amelioration in their symptoms. Of course, the disappearance of all nocturnal emissions is not to be expected, nor is it desirable, and the question whether harm results in these cases of wet dreams depends entirely upon the effects which they produce upon the nervous and physical health.

The most favorable prognosis occurs in those instances where the patient's health is good and where he is naturally strong, especially in such as have never abused themselves nor have had carnal intercourse, although the sexual instincts may have been strong and the erections powerful notwithstanding the emissions have been abundant, provided the orgasm was present and the seminal losses were attended with a feeling of relief and comfort. But it sometimes happens in cases where the emissions have occurred unconsciously, that they have been supplemented by occasional masturbation, particularly where sexual intercourse is abstained from, either because of a fear of contracting venereal disease, or from any other cause. Where irritation exists in the deeper portion of the urethra it is frequently noticed that emissions are likely to occur from trifling causes, such as fondling or cossetting women (even if there be no sexual intercourse), or from the perusal of erotic literature.

The matter of prognosis, however, becomes very different in instances of diurnal pollutions, but even here, fortunately, alarming as the symptoms appear when seen in cold print, and terrible as they are to the unfortunate sufferer from them, the prognosis is not necessarily unfavorable, provided the patient has been blessed with a

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fact that in nearly all of these neurotic subjects where the prognosis is especially unfavorable, there has been congenital and hereditary weakness during youth of the uro-genital organs with a tendency toward *bed-wetting* which lasted not only during childhood, but well along into puberty. These are the cases in which the surgeon sees the direst results, both from masturbation and diurnal pollutions, and which degenerate into the worst forms of neurasthenia and impotence. In these patients the prognosis is still more unfavorable if we find the local causes almost nothing and the nervous symptoms the predominant and striking features of the case.

The prognosis is also bad in those subjects where the disease begins after the patient is advanced in life, after he has been married for several years, or where the diurnal pollutions are complicated, as they not infrequently are, with impotence.

Treatment.—A very common error made by physicians has been and still is to consider these patients as hypochondriacs; as persons who have no physical basis for their ailments and who are victims of imaginary ills. I am perfectly satisfied that no greater mistake can be made by medical men than this. Undoubtedly there are all grades of sufferers from pollutions, from the one whose nocturnal emissions are normal, or nearly so, to the man who suffers both mentally and physically and is, indeed, to all intents and purposes, a complete wreck. They require kindly attention to their ailments, sympathetic appreciation of their malady, and if not needing active medical treatment, they do demand some sound advice with regard to the nature of their disease and its consequences.

Where the nocturnal emissions are not abnormal, where it is evident that the patient is more frightened than hurt,

that if he will let things alone and not tinker with or worry over himself, matters will come out all right. Sometimes, however, the emissions are a little more frequent than they ought to be. The patient having had two or three emissions per night may get up in the morning feeling seedy, with a little headache and sense of depression and restlessness. The surgeon should make an examination of the urethral tract, of the external genitals, and of the rectum to discover if there is any cause for this trouble. He may, probably will, find some congestion of the prostatic portion of the urethra. Sometimes the meatus is very narrow; a long and dirty foreskin may be the seat of the trouble; or some rectal irritation may possibly cause the disturbance, and where these occur, proper treatment will relieve the trouble at once, some anodyne medicine being given in addition to relieve the sensibility of the part and to assist in hastening the cure. These are the simplest of the cases requiring treatment and it usually takes but a short time to change the patient from a moping hypochondriac into his former cheerful self.

But sufferers with *diurnal* pollutions require something more than this. Many of the symptoms detailed in the preceding pages have originated in a local congestion of the deeper portion of the canal, attended with extreme hyperæsthesia of the parts, or in some spinal or cerebral lesion, and which of the two is the immediate cause the surgeon will have to determine. They are very often associated together, but, fortunately, the larger proportion of cases has local origin and is not due to constitutional disturbances.

Endoscopic examination of the urethra often reveals the existence not only of congestion and inflammation of the prostatic and membranous portions, but irritation and inflammation of the caput gallinaginis or about the openings

of the ejaculatory ducts. These are best treated by the local application of some astringent solution, such as the nitrate of silver, varying in strength according to the indications of the case and the improvement produced by the medications. Making the application through the endoscope renders it easier for the surgeon to confine the solution directly to the diseased parts. He is not working in the dark as he is when Lallemand's instrument or the deep urethral syringe of Ultzmann is used, and I am satisfied from a pretty extended experience with the endoscope, that it is of great service in the treatment of these deep-seated affections of the male urethra, and so far from nitrate of silver being injurious or producing urethral stricture and other local disturbances, I am decidedly of the opinion that if properly used and not abused, this metal is one of the best therapeutic agents in our hands for the treatment of this class of diseases. Other solutions which may be serviceable are glycerole of tannin U. S. P., solutions of the sulphate, the sulphocarbonate, the acetate and the permanganate of zinc, tincture of catechu, or the insufflation of powdered iodoform, aristol, argonin, or aluminol.

Injections to be of any service should be made through a tube sufficiently long to reach the deep urethra, a proceeding which should be done by the surgeon and never allowed in the patient's hands. This method presents no advantage over applications made through the endoscope; indeed, this latter instrument is so much superior to the syringe that I have abandoned the use of the latter in treating this class of diseases.

Lallemand's cautery, an instrument devised for making applications of nitrate of silver to the deeper parts of the male urethra, was much lauded by the inventor and his disciples, but its application was found to be at-

tended with so much inflammation, bleeding, and injury to the urethra that its use was abandoned and it has been lately superseded in the armament of the genito-urinary surgeon by the endoscope which does the same work much better and with greater safety.

If a *stricture* be the cause of the trouble, this may be treated either by dilatation with sounds, which should be of the largest size that the urethra will admit, or, if necessary, the stricture may be divided either internally or externally, and of the two internal methods I much prefer divulsion to section, although I am aware that divulsion has been stigmatized by a well-known surgical authority in this country as both barbarous and unscientific. It has, however, in my hands been attended with good results, whereas the internal section has very often given me a great deal of anxiety and alarm for the patient. I see no reason, therefore, to change the opinion I expressed some years ago that internal section for stricture of the male urethra is an exceedingly dangerous operation and I do it as little as I possibly can.

If the *prepuce* is the source of trouble, the treatment is easy and consists in the removal of the foreskin, while if the *meatus* is too narrow, a proper and scientific slit will remedy the difficulty. And while on this question of slitting, I must entreat my surgical brethren to be careful not to convert that which in its natural condition is a pleasing and useful orifice, into an opening which makes the patient's penis look as though it were affected with an *hypospadias*.

If the pollutions be due to an uncured *clap*, the treatment for chronic urethritis will very probably relieve the *clap* and the two diseases will disappear together. In cases of *prostatitis*, both acute and chronic, the remedies proper for this form of disease will be scarification, local

ment should be instituted with great precaution and care lest injury be done.

If there be any *rectal* or *anal* irritation, such as piles, fissure, ascarides, constipation, chronic diarrhœa, and the like, they should be attended to *secundum artem*, and here let me say a word with regard to *constipation*, which I believe to be more frequently than is commonly supposed a fruitful cause of keeping up the seminal irritation and pollutions. The patient's bowels should be kept rather open, and he should never be allowed to go for a day without having a fecal movement. In the majority of cases, patients suffering from these affections can use enemata and suppositories, but it must be remembered that these remedies may sometimes induce pollutions (Peyer's and Frank's cases), and if the patient be unable to employ them for the relief of the constipation, we shall have to trust to some internal method of treatment. Mild saline laxative waters, senna, buckthorn, rhubarb, castor oil, and the like, can be administered, but care should be taken to avoid the use of aloes or other drastic medicines which have a tendency to congest the lower portion of the bowels and to increase and keep up the seminal irritation. Conjoined with these internal methods, attention to the *diet* which should be slightly laxative, exercise in walking, light gymnastic movements, and kneading of the abdomen will all prove of service in many instances.

Among the *operative procedures* which have been stated as curative of seminal emissions, Trousseau mentions the case of a patient of Dr. Adolph Richard who was cured of this affection by forcible dilatation of the sphincter ani, and Bartholow writes approvingly of the frequent use of rectal bougies, "increased in size to the utmost capacity of the anus."

Various *instruments* have been devised with the object by compression of preventing seminal pollutions. The best known of these is Trousseau's instrument, which is made of hard wood, pyriform in shape, with a foot or pedicle at the end of a short neck. The pyriform body is passed into the rectum, the neck is grasped by the sphincter ani, and the pedicle rests against the anus and the perineum being held in position by a perineal bandage; its object is to compress the openings of the ejaculatory ducts, especially where these are lax and have a tendency to remain open. Trousseau speaks in high terms of this apparatus, and states that he has used it in patients where all other treatment has failed. Pitha also mentions one instance where its use was followed by very gratifying results.

Another method, devised by Ravoth, is a bandage to compress the saphenous veins, and is more especially useful where pollutions occur as the result of or associated with varicocele.

Another instrument which has also been used for this purpose is the application of a girdle with a knob or projection fastened upon its inner surface, so arranged as to press against the lumbar portion of the spinal column, the object being that when the patient turns over on his back, in which position nocturnal pollutions are supposed to be of more frequent occurrence, the pressure on the spine will awake the patient and so prevent the pollution.

My own experience with two out of three of these instruments, for I have not used Ravoth's bandage, has been that they are of rather doubtful utility, and the discomfort of Trousseau's instrument is such that patients, in this country at least, will not use it with any degree of faithfulness.

Electricity is another method of treatment which has

been highly spoken of, and was first employed, I believe, by Duchenne (de Boulogne), who used the faradic current in these forms of disease, claiming to have had unusual success. Schultz and Benedikt prefer the galvanic to the faradic current, the former stating that the faradic current acts unfavorably in the treatment of pollutions. Benedikt suggests the following method of treatment: If the pollutions appear only every eight or fourteen days he attempts to relieve the difficulty by regulating the sexual intercourse, a proceeding which he claims is usually successful. If the pollutions occur more frequently, then galvanic treatment is commenced in the following manner: He places the copper (positive) pole upon the lumbar vertebrae, and with the zinc (negative) pole he strokes the seminal cord throughout its long axis forty or fifty times. He then makes applications diagonally across the various zones of the upper and lower surface of the penis and afterward over the perineum, in its long axis, keeping the scrotum well out of the way. Each sitting occupies two to three minutes and the galvanic current which he employs is a weak one. In addition to this, generally three times in fourteen days, the copper pole is applied in the shape of a bulbous rheophore (catheter-electrode) passed through the urethra to the neighborhood of the ejaculatory ducts, while with the zinc pole the spermatic cord is stroked over its long axis.

If the catheterization of the usually hyperæsthetic urethra is ill borne or attended with much pain, he resorts to catheterization with thin elastic bougies for eight or ten days before using the galvanism. When particularly sensitive points in the urethra are detected, the faradic combined with the galvanic current is used from time to time, and where the testes are irritable, a fairly powerful galvanic current is passed through these organs.

victions. He states that, if employed with great caution and with a current of very feeble power, no harm may result; but, although currents of considerable electrolytic power may frequently be borne without any after ill effects, it is equally true that these same applications, whether weak or strong, have in a number of instances been followed by profound and lasting irritation. Generally speaking, he strongly recommends direct application of the faradic current to the urethra, on the same principles and to meet the same indications that the occasional introduction of the ordinary catheter is attempted.

Mechanical pressure also tends to relieve the congested capillaries and to very decidedly lessen the sensibility of the urethral nerves, and when combined with the faradic current he is convinced that the good effects of catheterization are markedly increased.

So far as my own experience goes, I regret that I cannot share the enthusiastic views of the electricians. In some instances, undoubtedly, benefit does result, but I have also repeatedly seen cases in which no benefit was derived and not infrequently many in which the application both of galvanism and faradization seems to have increased rather than to have diminished the difficulty. Although by no means condemning this method of treatment, I think it should be used with great caution, and of the two, I have a preference for the weak galvanic over the faradic current.

Bathing, if properly pursued, seems to have a very decidedly good effect in many of these cases of seminal derangement, and the baths may vary from a hot one of 95° to 100° F. and over to a tepid bath of 70°, and occasionally even a cool bath of 60°.

In cases where there seems to be great irritability without much loss of tonic power, and where the hyperæsthesia

should be cut down, and I am decidedly of the opinion, that Americans, as a rule, eat far more flesh than is necessary. The meat diet should be cut down to two and better to one meal a day, and the patient should be encouraged to take freely of vegetables, fruits, and cereals, many of which contain quite a large amount of nutriment and can be made, in combination with fish and eggs, to contain sufficient albuminous and nitrogenous materials to compensate for the withdrawal of the superfluous meat which the patient has perhaps been in the habit of eating.

As regards the question of *drink*, only so much should be permitted as is actually necessary to allay thirst, and it should be of the blandest description. Stimulants should be absolutely forbidden, I mean the use of wines, beer, or spirits; very exceptionally can this rule be departed from, and then only where the patient has been in the habit of using them and where he is so debilitated that the withdrawal of his stimulants would injure rather than benefit him. Under these circumstances, the best drink that he can indulge in is a little good whiskey taken with his meals, but never before meals or upon going to bed. Tea and coffee should also be interdicted, especially this latter, which I am convinced has a decided effect upon the diseased genital organs. Milk, cocoa, and if not too rich, chocolate should be preferred to either of the other forms of beverage, and there is no objection, if the patient likes them, to allowing him the moderate use of the mineral waters, either still or effervescent.

As regards the question of *medicines*, where there is a marked hyperæsthesia, and where the nervous system is evidently much deranged, especially if this be associated with marked physical debility, tonics play an important rôle, and the varieties which I have found to be most useful have been the mineral acids and phosphates. Where

be allowed to *marry* with the expectation that his wife will prove of more service than the physician. In my experience I do not find that she ever does, at least not in these cases, and marriage certainly should not be allowed until the patient has so far recovered as to be able to perform his conjugal duties with some degree of success, and when he does begin he should be cautioned to use his newly found faculties with care and avoid anything like over-indulgence in coitus, and above all, he must be taught that coitus protractus or coitus interruptus should not, for a moment, be thought of.

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**PROSTATORRHŒA SIMPLEX AND
URETHRORRHŒA EX LIBI-
DINE SEXUALE.**



CHAPTER VIII.

PROSTATORRHŒA SIMPLEX.

Prostatorrhœa, as the name implies, is a discharge of prostatic fluid analogous to what takes place, or is supposed to take place, in spermatorrhœa. While both names are more or less misleading, as they imply a continuous and steady flow of prostatic fluid or of semen from the male urethra, the terms have been so engrafted in the literature of the subject that it would be difficult if not inadvisable to attempt to find a substitute for them. It should, however, be distinctly borne in mind that *this discharge is not continuous*, but is more or less intermittent in character *except in very unusual cases* and is often apt, as will be seen later on, to be confounded with other discharges from the urethra, with which it has nothing in common. Another point that should be carefully borne in mind is that it is an entirely separate disease, and has *no connection whatever with chronic prostatitis* for, although this latter affection may be attended with some secretion from the prostate somewhat similar in many respects to that which occurs in genuine prostatorrhœa, the causes which produce the two diseases are entirely separate and distinct. Chronic prostatitis results, in the majority of instances, from gonorrhœa, whether antecedent or present, whereas *prostatorrhœa vera is not at all dependent upon gonorrhœa*. It may and does occur in persons who have never had any venereal diseases whatever and, although the two diseases may pro-

constant moisture at the orifice of the urethra and may even make a decided impression upon the patient's linen, leaving it wet and stained, somewhat in the same manner as in gleet or gonorrhœa, though in a much less marked degree. The most copious evacuations of this kind generally occur while the patient is at the water-closet, engaged in straining, especially if the bowels are constipated or the fæcal mass is uncommonly hard, or greatly distends the rectum so as to exert an unusual amount of pressure upon the prostate gland.

"The discharge, whether small or large, is often attended with a peculiar sensation, referred by the patient to the prostate gland from which it frequently extends along the whole length of the urethra and even to the head of the penis. In some cases, indeed in many, the feeling is of a lascivious, voluptuous, or pleasurable nature, not unlike that which accompanies the earlier stages of sexual intercourse. Not a few patients experience what they call a dropping sensation, as if fluid fell from the prostate gland into the urethra. Other anomalous symptoms often present themselves, such as a feeling of weight and fatigue in the region of the prostate, anus, and rectum, or along the perineum, with perhaps more or less uneasiness in voiding urine and a frequent desire to empty the bladder; some patients are troubled with morbid erections, and their sleep is interrupted by lascivious dreams."

In this definition I think that Dr. Gross has confounded the three affections, chronic prostatitis, prostaticorrhœa, and urethrorrhœa, for his statement that it is generally a discharge of "mucus, generally perfectly clear, transparent, more or less ropy," does not agree with what we at present understand and recognize as the secretion from the prostate gland, and it is more or less similar in character to the discharge which we observe under like circumstances in

cases of an increased secretion from Cowper's glands or the glands of Littre (urethrorrhœa). As has already been stated under the heading of "Physiology of the Prostate" (*vide antea*, p. 43), the secretion from the prostate gland is a thin fluid which is turbid, sometimes milky white; not clear and transparent, and is never sticky. There are other characteristics whereby the secretion from the prostate may be more definitely ascertained and which I shall consider later on, but in its gross appearance, the difference between the two discharges is quite apparent, and if the discharge from the prostate is abundant, it has a seminal odor which we recognize as being peculiar to the prostatic fluid and present in no other of the genital secretions. Although this fact has been denied by Groschlik and Guerlain, from my experience I think it is present except in those cases where the prostatic discharge is very slight (Fürbringer). Indeed, I believe that the seminal smell is very seldom absent. Other statements which I should criticise are that "it is seldom puriform and still more rare that it is purulent." The *discharge* from the prostate in a *genuine* case of *prostatorrhœa* is *never purulent*; when it is, the affection is a prostatitis, acute or chronic, but not a true prostatorrhœa. Again, the "feeling of weight and fatigue in the region of the prostate, anus, and rectum, or along the perineum, with perhaps more or less uneasiness in voiding urine and a frequent desire to empty the bladder," pertains more to an inflammatory condition of the prostate or of the vesical neck than to the affection under consideration. His son, the late Dr. S. W. Gross, I think, appreciated that there was some difference between the secretions from the prostate and the urethra, but even his definition I regard as defective, inasmuch as he says in his work on "Diseases of the Male Sexual Organs": "Prostatorrhœa, an affection which was first described by S.

D. Gross, signifies a discharge from the urethra of the secretion of the prostate gland, especially after defecation and micturition. It may exist with or without inflammation of the prostate, representing in the former event a catarrh, and in the latter merely a hypersecretion of the tubular glands of that organ. I believe that the malady is generally due to passive congestion; and I am certain that it does not follow an attack of acute inflammation of the prostate"; and under the head of "Clinical History" he goes on to say, "the most prominent symptom of the disease is the discharge of a thin, and, as a rule, more or less milky, acid fluid from the meatus, which may be constant in appearance, but which is always expressed from the urethra during the straining at stool and during the forcible expulsion of the last drops of urine or even during sneezing, coughing, or laughing." One objection I should make to this definition as given by Dr. S. W. Gross is that a *true prostaticorrhœa is never a catarrhal affection*; it is a hypersecretion of the prostate; it is *not attended with inflammation*, either acute or chronic, and in my opinion, should be classed rather as a subacute irritation than a true inflammatory product. When pus cells or any evidences of a catarrh appear we then have to deal with a prostatitis, be it subacute, acute, or chronic, but not with a prostaticorrhœa. There are microscopical points which might be discussed, but these I shall reserve for the portion of this chapter which treats of the differential diagnosis existing between prostaticorrhœa, spermatorrhœa, and urethrorrhœa, for after all the microscope is the court of last resort, whose verdict in distinguishing between the characteristics of these various urethral discharges is final.

Guerlain also seems to have been hopelessly confused between prostaticorrhœa, prostatitis, acute and chronic, and

tions from the prostate; an accompaniment of inflammation of the prostate, and not a symptom of prostaticorrhœa vera. I shall therefore define prostaticorrhœa as being the secretion of a thin, turbid, or milky white fluid, usually of a slightly acid reaction, occasionally neutral, which is not ropy, which is not sticky, and which contains no evidences of inflammatory action, such as pus cells or leucocytes; it contains amyloid bodies although they are not a necessary accompaniment, for these substances may be found in the secretion from other portions of the genital tract and in the urine of women (Fürbringer, Groschlik), and upon the addition of a one-per-cent. solution of phosphate of ammonia produce the peculiar crystals already described under the name of Boettcher's crystals, which crystals are never found in the secretion from any other portion of the genital organs except the prostate. This disease is due to an irritation of the follicles of the prostate, stopping short of inflammation, whereby they become more or less dilated, precisely as the openings of the ejaculatory ducts in the prostate become flabby and dilated, thus favoring more or less leaking of the prostatic fluid even upon the slightest provocation. The other symptoms which have been noted, such as the stiffening of the linen, etc., I attach no importance to as the same thing occurs in urethrorrhœa, and in this latter the discharge is also noted during stool and micturition, being more or less continuous according to the amount of irritation set up.

Etiology. — The etiology of prostaticorrhœa has been ascribed to a variety of causes. The elder Gross stated that in most cases it was "traceable either directly or indirectly to venereal excesses, unsatisfied sexual appetite, chronic inflammation of the neck of the bladder, stricture of the urethra, especially when seated far back, or hyper-

of the compressor urethræ muscles in two, and by stricture in nineteen."

Masturbation undoubtedly plays a part in the production of this disease, but in this connection I incline to the belief that masturbation is less ardently and persistently practised after early life in this country than it is abroad, if we may judge from the accounts in the various text-books and monographs on this subject, but undoubtedly where it is continued into later life and especially where it is intemperately performed, it will set up an irritation, and that irritation would be sufficient to produce leaking from the prostate, and the same causes produce similar results in cases of urethrorrhœa. A second cause of prostatorrhœa is the bad habit of *withdrawal* indulged in with the object of preventing conception of the woman without foregoing the pleasure of coitus. In neither of these two habits do I believe that much injury results if they are not abused, but the trouble with both is that indulgence in them does not produce the same satisfaction which coitus does; there is a constant hankering for more intercourse; this inordinate desire gives rise to more frequent copulation until hyperæsthesia is set up in the prostatic urethra which is sought to be relieved by more coitus, and thus a vicious circle is established; the more the patient copulates the more the irritation, and the greater the irritation the greater the desire for coition. It is this over-indulgence in coitus which does most of the mischief.* A third cause of prostatorrhœa is sometimes

* To this last sentence Vecki takes exception in the American edition of his work on "Pathology and Treatment of Sexual Impotence." He there states that "my [his] experience in nearly all the cases observed was a lowering of the sexual desire in men, and consequently it cannot be the over-indulgence in coitus which does most of the mischief." In by far the larger proportion of cases which I have seen I have not noticed that there was a lowering of the sexual desire. On the contrary, the sexual desire has nearly

induced by severe and prolonged riding upon horseback and the bicycle, especially where the saddle is of the variety in common use in certain portions of the United States. Of late years the objection urged against the bicycle saddle has been much obviated by the manufacture of a broad saddle which distributes the weight of the rider upon the nates, instead of bringing it on the perineum as the old hog-backed saddle used to do.

Symptoms.—The first thing that usually attracts the patient's attention to his genitals is the fact that the head of his penis is moist, and upon investigation the patient is greatly alarmed to find at the meatus a *slight, thin, grayish or milky white fluid*, which perhaps can be squeezed out after steadily stripping of the penis. This frightens him very much, for he immediately pictures to himself that this discharge means a loss of semen, a loss of semen implies "loss of manhood," and a "loss of manhood" means ruin. If he gives himself time for further investigation he finds perhaps that this fluid is also *excreted at stool*, and as regards *urination*, he sometimes notices that it occurs at the end of the act as a thin secretion which looks differently from the urine which he has just passed. Associated with this condition is a sense of *irritation in the crotch*, a *tickling in his urethra* as though a drop of fluid were running along the floor of the canal; a feeling sometimes of *smarting and burning*, especially at the end of urination, and attended occasionally, but very rarely, with a slight degree of *vesical tenesmus*. The effect upon the patient's mind is oftentimes out of all proportion to the urgency or im-

always been normal, sometimes increased, and while I freely admit that the hyperæsthesia of the deeper portions of the urethra is probably primarily responsible for the irritation and consequent prostatorrhœa, it is kept up and increased by the over-indulgence in coitus which I have found to exist in so many of these cases, and as I have stated above, a vicious circle seems to be established.

portance of his disease. With the idea of a spermatic loss firmly fixed in his mind he already pictures himself as well on the road to perdition, and it often requires the utmost efforts of the surgeon to drive the idea out of his head, and it is this mental condition which aggravates all the symptoms and makes the patient a sexual neurasthenic, when probably there is nothing else the matter with him than a slight loss of prostatic fluid. *True prostaticorrhœa, in my belief, is exceedingly rare.* A large proportion of the cases which we see of so-called prostatic discharge is either urethrorrhœa or else spermatorrhœa, and, from my own experience, I am certainly satisfied of this fact: that a larger proportion of cases of non-venereal urethral excretions is due to spermatorrhœa than is generally supposed, notwithstanding the dictum of various eminent men, as, for example, Hammond, who writes that "in the whole course of my experience I have seen but one case in which there was an escape of semen during defecation, and in that there was some approach to an orgasm," or Gross (S. W.), who says, "spermatorrhœa is, on the other hand, one of the rarest of all diseases." I must admit that these experiences are entirely at variance with my own. Brought up as I was during the earlier years of my medical career with the belief that nearly all urethral discharges of this character were prostatic, I have by later experience, in using the microscope, been much astonished to find that in a very large number of such discharges spermatozoa were present, and whenever spermatozoa are frequently found in any discharge from the urethra it is clear that the disease can be nothing else than a spermatorrhœa, for if in any given discharge of that kind spermatozoa are found, we can exclude, without any hesitancy whatever, the fact of its being a simple prostaticorrhœa. Of course I reject those instances where an

emission has occurred, whether *ex coitu* or *ex manu*, shortly before the examination has taken place.

If an examination be made of the prostate the result is usually negative. The prostate is not enlarged, and except for the usual uncomfortable sensation produced by the presence of the finger in the bowel, there is no pain; none such as is found in cases of prostatitis, acute or chronic. Neither is there any change in the consistency of the organ, it being neither softer nor firmer than in a normal condition. The urine in these cases shows nothing special, differing in this respect from what is seen in cases of prostatitis, where mucus, pus, and blood are not infrequently found.

Endoscope.—The results of an endoscopic examination in this variety of disease vary from a trifling amount of hyperæmia in the earlier and milder cases to a condition where there is marked congestion and hyperæmia of the mucous membrane of the prostatic portion of the urethra, and associated with this condition the openings of the prostatic ducts are found to be enlarged and patulous, so much so that sometimes in passing the endoscope into this portion of the canal the secretion of the prostate is squeezed out into the tube. Where there is much hyperæmia, bleeding is not an infrequent concomitant of the examination, but the amount of blood lost, so far as my experience goes, is never great.

Course.—With regard to the course of prostaticorrhœa, it is usually tedious, inasmuch as it takes time before the dilated prostatic ducts can regain their former tone and become as they were before.

Pathological Anatomy.—The only author who, to my knowledge, has attempted to describe the pathological anatomy of the prostate in cases of prostaticorrhœa is Ledwich, but as his two cases are instances of chronic prostatitis, if

indeed they are not tubercular infiltration of that organ, his specimens are of no value for the case in point. As the disease is not a fatal one pathological specimens can hardly be looked for.

The late Dr. S. D. Gross considers the pathology of this affection to consist in chronic "catarrhal inflammation of the mucous follicles of the prostate, leading to an inordinate secretion and discharge of its peculiar fluid. Nevertheless, there are cases, and these are by no means uncommon, in which it (the prostate) is to all appearance either entirely healthy, or so nearly so as to render it impracticable by the most careful exploration to discover any departure from the normal standard. The discharge under such circumstances seems to be the result solely of a heightened functional activity, probably connected with if not directly dependent upon disorder of the seminal vesicles, the urethra, neck of the bladder, or recto-anal structures; in other words, upon reflected irritation." Indeed, in this last paragraph Dr. Gross has accurately defined a true prostaticorrhœa as distinguished from inflammation of the prostate which up to this point in his work he has been describing. I myself believe that it is more frequently associated with a *posterior urethral congestion or irritation* than with almost any other lesion.

Prognosis.—The prognosis of prostaticorrhœa is favorable, and although the course of the disease is slow and tedious, in nearly all cases the affection gradually subsides and the patient recovers both his physical and mental tone.

Treatment.—The first question to be asked before instituting any medication will be what caused the trouble. If due to masturbation or withdrawal the first step toward recovery is to stop these bad habits. If there is reason to suppose that riding either on horseback or the bicycle is the source of the trouble, these exercises must be abandoned

kept under observation for more than three months after treatment was discontinued, and no relapse occurred.

The other groups were not favorably affected by the treatment.

Locally the two best remedies I know of are the full-sized, cold steel sound and the psychrophore of Winternitz, cold water being used. Cold hip baths, sprays, and perineal douches are also of service, but only in those cases where the prostaticorrhœa is due to general or constitutional causes. When the affection is due to local causes this form of treatment is of no value (Mallez). It is in these latter cases, and especially where they are obstinate, that applications of nitrate of silver through the endoscope are sometimes effective. Ultzmann speaks well of the use of the induced current.

URETHRORRHŒA EX LIBIDINE SEXUALE.

This discharge from the genital organs must not be confounded with that which has just been considered, viz., prostaticorrhœa. The two are entirely *dissimilar* both in the appearance of the flow and in the portion of the genital organs from which they are derived. It must also be distinguished from the urethritis derived from sexual intercourse with a woman during her menstrual flow which Diday has described. It is *not dependent* upon *venereal disease* and may be, indeed often is, *unconnected* with results of *coitus*.

Etiology.—Urethrorrhœa is caused, as a general rule, by *ungratified sexual excitement*, especially if this be attended by *frequent and persistent erections*. Besides this cause, *masturbation*, *sexual excesses*, and *coitus reservatus* may also induce this affection by producing an irritation of the urethral mucous membrane with *hypersecretion* of

the glands of Littre and Cowper, causing them to pour out their secretion more abundantly than usual, and this is assisted by the pressure exercised upon these glands by violent and continuous erections. This discharge has often been mistaken for a gleet or spermatorrhœa by patients who are much alarmed by its appearance, but an examination with the microscope will readily reveal its true character.

Symptoms.—Generally the first thing which attracts the patient's attention is the discovery of a *thin, fluid, transparent drop at the head of the penis* on awakening in the morning with the usual *erection*. This drop is found to be *sticky and tenacious*, for on touching with the finger it is capable of being drawn from the meatus for some little extent and on rubbing it between the fingers it imparts a *soapy feeling*. If, as sometimes happens, this exudation leaks from the urethra during the daytime the *meatus* is found to be *stuck together*, requiring sometimes a slight degree of force to open the lips of the orifice. This drop is *not turbid nor discolored*, but is *perfectly clear*, is *unattended with orgasm or ejaculation* and has *no spermatic odor*. Where the urethral mucous membrane is irritated and the functional activity of the glands is stimulated beyond its normal bounds, this fluid *may leak away during stool*, and occasionally, but this is rare, it may *come away* from the patient at the *end of micturition*. It does *not stain* the linen but it *stiffens* it, especially if the flow be abundant. The amount may vary from *one drop to several drops*, rarely as much as a half drachm, though Guyon states that sometimes the secretion (of Cowper's glands) is so abundant that it may give rise to a regular discharge, even although complete erection is absent. The fluid from the urethra appears as drops, which succeed each other as continuously as do discharges occurring

in the anterior portion of the urethra. So far as the *physical effects* upon the patient are concerned they are *nil*; the *chief consequences* are the *mental* disturbances which it produces upon the invalid, giving rise to the belief in him, as it nearly always does, that he is suffering from spermatorrhœa. During *stool* the patient will often inform the surgeon that the act is accompanied with a sensation of *scalding in the urethra*, and during *micturition* there is a sense of *tickling, rarely a burning*, in the canal. These symptoms are evanescent and speedily pass off. There is *no* alteration in the *sexual functions*, except in so far as the patient's mind may produce a condition of psychical impotence.

Microscopical examination of the secretion reveals nothing more than a few flat or round, not cylindrical, epithelial cells from the urethra, some mucous corpuscles, free mucus, and occasionally a few shreds, resembling those found in any irritation of the urethral mucous membrane, but no pus cells, no amyloid bodies, no spermatozoa and no spermatic crystals (Boettcher's, Pl. I.).

Course.—The course of this disease is usually chronic, lasting for some time and not being very amenable to treatment.

Prognosis.—The prognosis in this affection is favorable, for although chronic, and not responding readily to treatment, the disease ultimately disappears, and during its course is neither exhausting to the physical powers nor is it attended by any serious consequences.

Treatment.—The treatment depends largely upon the cause which produces it. When due to constant erections without the power to relieve the sexual excitement, sedatives, such as the bromides or any other anodyne which will tend to relieve the sexual excitement or erections, will be of service. It is not advisable, so far as my experience

cells. This, I believe, constitutes a correct picture of the seminal fluid as we find it under the microscope. Its reaction is feebly alkaline, and it has a peculiar smell (the seminal odor).

In prostatorrhœa simplex we find amyloid bodies (Pl. II., Fig. 1), but they are not constant nor do they necessarily come from the prostate; lecithin (Pl. II., Fig. 5) and, what is pathognomonic of this secretion, prostatic crystals (Boettcher's, Pl. II., Fig. 3). If the secretion is simply prostatic, these crystals are not spontaneously formed, as a rule, although Fürbringer and Groszlik say that they may occasionally be produced by contact with some of the salts of the urine, but this is a point which has not, as yet, been thoroughly cleared up. They can be produced artificially by the addition of a drop of a one-per-cent. solution of ammonium phosphate, or, naturally, by the addition to the prostatic juice of the secretion from the vesiculæ seminales, which appears to be abundantly endowed with phosphorus. Another point well worthy of note is the character of the epithelial cells which are found. In the normal semen the epithelial cells are of three varieties: the flat, pavement epithelium from the urethra, the round and columnar cells from both the urethra and the prostate, and lastly the columnar (cylindrical) epithelium which is derived from the prostate as well as from Cowper's glands (Pl. II., Fig. 4, 4, 4). These, in the secretion from the prostate, are often found grouped together with the round cells in their interspaces, forming a species of mosaic, and these cylindrical cells Fürbringer regards as peculiar to the prostatic fluid. It occasionally happens that in this prostatic fluid a few scattered spermatozoa may be found, and this is especially the case if just previous to the examination the patient has indulged in coitus or masturbation or has had a seminal emission.

But they may also be present, and in my experience almost always in a mutilated form, in cases of prostatorrhœa where the prostate is milked to obtain the prostatic fluid, without the vesiculæ seminales having been submitted to the process of massage. Thus I have now under my care a patient who is suffering from spermatorrhœa. He has never had diurnal pollutions. He has occasionally, as every healthy man has, nocturnal emissions, but on stripping the prostate I sometimes obtain heads of spermatozoa, but not the bodies, and these I think are probably retained in the openings of the ejaculatory ducts which are in a flabby condition, and have probably been there for some time. In the case I mention, on the last examination that I made when these bodies were found, there had been no coitus for some weeks and no nocturnal emissions for three months, so that I am constrained to believe that these bodies had undergone some sort of degeneration in the openings of the ejaculatory ducts and that the heads alone have been expressed during the process of massage; but as Fürbringer says, the occasional presence of a few spermatozoa does not militate against the idea of the secretion being prostatic. I agree with him as to excluding the cases which Black mentions in his paper, where under the head of prostatorrhœa he includes what, to my mind, are undoubted cases of spermatorrhœa; in other words, where spermatozoa are abundantly found. Indeed, I should judge from his paper that he (Black) is very hazy with regard to the correct definition of what constitutes a genuine prostatorrhœa.

The gross appearances of the fluid are peculiar. It is not gelatinous such as we find in spermatorrhœa. It has none of the characteristics of the secretion from the seminal vesicles. It is, as I have already stated, a thin, turbid, milky white fluid, and it has the seminal odor peculiar to

the secretion from the prostate and which is due, according to Fürbringer, to the lecithin which is abundantly found in this portion of the genital tract. Its reaction also is slightly acid or at most neutral. Given these characteristics, there should be very little trouble in determining whether a given secretion is prostatic or not, and the fact that Fürbringer has met with one case in which the crystals of Boettcher did not appear in the fluid which he was satisfied came from the prostate, does not militate against the general truth of the points laid down here. One noteworthy fact, and this I believe to be important, is that in none of the normal secretions of the various glands concerned in the process of generation are any pus cells or leucocytes found. When these are present, it always indicates an acute inflammation of some portion of the urinary tract; but that, however, has nothing to do with our subject. In prostaticorrhœa simplex the secretion is not, as a rule, very abundant and in some cases it is impossible, even with the most careful stripping, to get any free discharge from the urethra. But after the massage, on making the patient pass water in the manner advised by Fürbringer and Groslik, in the latter part that is passed the evidences of prostatic fluid are usually abundant.

As I have already stated, it is my belief that prostaticorrhœa is much less common than American surgeons think, or have been taught by their teachers and text-books to believe, and in this I wish to be understood as excluding all cases of chronic prostatitis which may result from clap.

In urethrorrhœa the secretion is thin, transparent, and sticky, and if allowed to dry upon the lips of the meatus, will close the orifice completely. There is no spermatic smell whatever to it and it is very sparse. Under the microscope it shows nothing beyond free mucus, a few corpuscles and perhaps shreds, together with columnar

pavement epithelium from the floor of the urethra (Pl. III.).

In gonorrhœa, on the other hand, we find pus cells (Pl. IV., Fig. 1), epithelium from the canal (Pl. IV., Fig. 2), varying from the pavement epithelium of the urethra to the columnar epithelium of the prostate, according to the duration and severity of the disease, and generally speaking, gonococci (Pl. IV., Fig. 3), but none of the characteristic elements, such as lecithin, crystals, or odor which we have found in the prostatic fluid, although occasionally we may find, according to Fürbringer and Groschlik, amyloid bodies which have come from some portion of the urethra.

The secretion from the seminal vesicles is thick and gelatinous and presents nothing worthy of special note.

These, in brief, are the characteristics of the fluids secreted by the generative organs in man, and I think if the points laid down here are borne in mind and if the microscope be used with knowledge and discretion, the surgeon will have no difficulty in making an accurate diagnosis as to the portion of the genital organs from which any given discharge comes, and I furthermore believe that if careful investigation of these secretions be made the surgeon will be astonished to find how few cases of genuine prostatorrhœa exist as compared with what is taught in lectures and books. I am decidedly of the opinion that a large proportion of discharges from the urethra, apart from gonorrhœa, depending upon some sexual derangement or functional disorder of the genital organs, is more frequently spermatic than prostatic, and, as I have already stated, I believe spermatorrhœa to be far less important as regards its ultimate consequences to the patient, outside of the mental impression produced, than are diurnal pollutions, the true distinction between which two diseases I believe is not generally made by the American surgeon.

SEXUAL IMPOTENCE.

CHAPTER IX.

SEXUAL IMPOTENCE.

(Physical Causes.)

IN discussing this phase of sexual debility care must be taken to discriminate between the loss of power to properly perform the sexual act, whereby coitus is either impossible or else seriously interfered with, and that other variety of sexual weakness in which, while connection is not impeded, or at least not materially so, the power of procreation is destroyed. The former of these two conditions is known as *impotence*, the latter as *sterility*, and it should be carefully borne in mind that a man may be impotent and yet be fruitful, or he may be sterile and yet amply able to indulge in copulation without his sexual powers being called into question. I shall therefore offer the following as the definition of sexual impotence: it is that condition of the generative organs in which the act of coitus is impossible, or so seriously altered as to render the man incapable of performing his part in the sexual act without interfering with his power of procreation. Where this latter function is impeded or destroyed he is sterile, but not necessarily impotent, although a man may be both.

In order to better discuss the various causes which bring about this condition of things I shall divide the subject into the following heads:

1. Physical.
2. Psychical.

to have a penis the size of a child's body. Clearly such an unlucky wretch would be condemned to a life of celibacy, for no mortal vagina would be capable of receiving such a membrum virile; but fortunately, large as some penes are, there are few, if indeed any, which from their monstrous proportions are denied sexual refreshment.

Atrophy of the Penis.—The reverse of what has just been written may be true, for the penis may be too small instead of too large, so small, indeed, as to be of no service in the copulative act. Roubaud gives a curious example of this condition in the person of a young Brazilian who consulted him because during coitus he was incapable of an ejaculation no matter how much he tried, while he was perfectly capable of emission when he masturbated. On examination of the genital organs Roubaud found them of lilliputian dimensions ("des proportions lilliputiennes"), the penis in erection being only two inches in length and in size as large as an ordinary porcupine's quill ("d'un piquant de porc-épic"). The testicles were also very small. Roubaud believed that the trouble arose from the fact that the walls of the vagina were unable to exercise any friction upon the penis of this young man owing to its diminutive proportions, and he therefore devised an ingenious instrument to remedy this defect whereby sufficient attrition would be exercised on this lilliputian penis to procure an emission. It was successful, and the extraordinary part of the whole affair was that by continued use of this machine the penis considerably increased in size and that twice the patient had indulged in natural coitus, being careful on each occasion to make the woman use astringent vaginal douches before copulation.

Wilson also gives an instance where a man, aged twenty-six, in whom the genitals were no larger than are found in a boy of eight years of age, married and these

organs by use increased to a normal size. This man before marriage had never indulged in coitus.

Veckl narrates a case as coming under his own ken of a man, who, caught in committing sodomy on a hen, excused his act on the ground that his genitals were so small as to preclude sexual intercourse with women, which upon examination was found to be the fact. Such an act would properly give rise to the suspicion that the man was a sexual pervert, but Veckl asserts that the man was perfectly sound mentally ("war geistig ganz normal").

Loss of Penis from Ulceration, etc.—There are not infrequent instances in medical literature where the penis was almost entirely gone from ulceration and yet where the man was both potent and fruitful. Chance narrates the case of a man who had lost so much of his penis by ulceration that all that was left of this organ was a small "nipple-like projection just long enough to separate the labia majora of his wife." He had one living child at the time of his death and another was on its way. Of course there is always a suspicion in such cases as to the paternity of the children, but in this instance there seems to have been no reason to suspect the wife's virtue, and as Chance writes that the man was satisfied the children were his own, there need be no good cause for doubt.

Partial loss of this organ does not seem to have an unhappy influence upon the potency of the individual, as is shown in a case recorded by Acton which occurred in an Indian army officer who had "lost the whole of the glans penis. This patient completely recovered his health, the parts healed, and a considerable portion of the body of the penis was left. I found, to my surprise, that the sexual act was not only possible, but that the same amount of pleasure as formerly was still experienced. He assured me, indeed, that the sexual act differed in no respect (so

far as he could detect) from that which it had been before the mutilation." Ogston gives a similar instance where the glans and part of the penis had been lost from phagedena, and yet, after the parts had healed, coitus could be indulged in as before.

Peno-scrotal Fusion (Pénis palmé of the French).—This deformity consists in a union of the under surface of the penis and the upper layer of the scrotum, often associated with curvature of the penis, which is fortunately remediable by an operation; but as that is properly a surgical matter I need not delay any longer here than to mention the fact that it would obviously be a cause of impotence, from a mechanical impediment to coitus.

Bifid Penis.—This may present itself in a separation from the middle of the organ; at that point the penis being bifid and provided with separate glandes penis (Krügelstein), to a condition where only the glans penis is split, the rest of the two penes being fused together (Rosse). In the former condition coitus was not possible on account of the deformity itself, while in the latter sexual indulgence was refrained from on account of the pain which it produced. This man is said to have been *capax coiere*. Van Buren and Keyes report a similar case.

Double Penis.—It sometimes happens that nature is lavish in her gifts, and this is exemplified by the fact that some males are endowed with two organs of generation. A most singular instance of this kind of deformity is reported by Acton, Hart, and Fisher, all referring, however, to the same man at different periods of his life. The case was a dipygus having a third leg and thigh with two feet fused together which was attached to the perineum. This, however, does not concern us; the point pertinent to our subject is that he had two distinct genital organs. This curiosity occurred in the person of one

portion of the penis may be a cause of impotence. It is usually congenital and is remediable by surgical operation. Gross mentions having seen several examples of this kind of deformity in which the penis was bent downward, and in the majority of instances associated with a slight degree of hypospadias with flattening of the glans penis.

Neoplasms.—Impotence may also result from the presence on the glans penis or on the prepuce of cancerous and other growths which by their size prove an impediment to the intromission of the membrum virile (M. Zeissl). I have seen instances where ordinary warts of the penis (*condylomata acuminata*) have been so large and exuberant as to preclude coitus, thus rendering the patient practically impotent.

Plastic exudations into the corpora cavernosa or into the corpus spongiosum, by causing deviation of the penis, may be causes of impotence, both for mechanical reasons as well as from the pain which they produce. The most common cause of this affection is *gonorrhœa*, but *diabetes*, *syphilis*, and *gout* all play a part in producing this affection. They may be single or multiple and disposed in nodules or in thin plates seated in the tissues, and cause curvature of the penis either sideways, upward, downward, and sometimes even spirally (Gross, S. W.).

Congenital torsion of the penis is frequently allied with other deformities of this organ, ex. gr., hypospadias or monorchidism, and may, when excessive, produce impotence, especially in those cases where the torsion is complete and the frenum penis looks upward.

A curious instance of *impotence from malformation* is given by McClellan in a patient from whose septum pectiniforme he removed a calcareous plate which by its presence produced a deviation of the penis and pain during

erection. Regnoli reports a similar case. In both the deformity was remedied by an operation.

Injuries.—One of the most common causes of trouble is due to rupture (improperly called fracture) of the penis. This may be caused *in coitu*, usually when the man is intoxicated, by striking the penis forcibly against the woman's pubes, or by forcibly bending the organ when it is erect (Weisblat, Miklaszewski). Mott mentions one instance where rupture was caused by the man striking the erect penis against the bed post which, proving to be harder than this organ, produced a rupture, and another where the same untoward result was brought about by pushing the erect penis into his drawers when the man was dressing. Fortunately these cases nearly always end in recovery so that the impotence is only transitory (Litwak), but sometimes the clot becomes organized and then the penis becomes permanently bent and thus proves an impediment to copulation; or it may be so seriously injured as to be past redemption, as witness the case reported by Dr. Ruschenberger who, during his naval service on the China station, was consulted by a Chinaman who had ruptured his penis on his wedding night half an inch from the pubes. From that time forth all erection ceased except for the first half inch, and the unlucky man was permanently impotent. Gross reports a case in which impotence resulted from a wound, the ball being retained in the corpus cavernosum of the right side and there becoming encysted.

Varix of the Vena Dorsalis Penis.—A varicose condition of the dorsal vein of the penis is mentioned by Parona, King, and Raymond as causing sexual impotence, possibly by allowing the blood to flow too rapidly from the erect organ. This condition was remedied by an hypodermic injection of chloral hydrate by Parona and by ligation

of the dorsal vein by King and Raymond, and in all the instances with complete success. Bartholow also speaks in laudatory terms of subcutaneous injection of ergotine in similar cases.

Phimosis with redundancy of the prepuce has also been mentioned as inducing impotence, but I am inclined to believe that it would be more likely to cause sterility than impotence by obstructing the flow of the semen, owing to narrowness of the preputial orifice. I do not regard phimosis as a probable cause of impotence, although it may be noted in passing that the early impotence of Louis XVI. was attributed to a phimosis which was removed by an operation (Cabanès, "Le Cabinet secret de l'Histoire," 1^{ère} série, "Impuissance de Louis XVI.," p. 73).^{*} Where, however, phimosis is associated with an adherence of the glans to the foreskin then impotence may occur from the pain which is caused by attempts at coitus (Petit).

Shortness of the Frenum.—This peculiar defect of the genitals is usually congenital and may interfere with the sexual act, not only from the pain and discomfort which it occasions, but because it may also give rise to neurasthenic symptoms which border closely upon perversion of the sexual sense, arising solely from a physical basis. Fere reports a singular case which is peculiarly instructive and which I shall give somewhat in detail.

The subject was a man who personally was robust, of strong constitution and thoroughly virile in appearance. He came of a neurotic family, his maternal aunts being affected with various nervous lesions.

He lived an active life in both a business and a scientific sense and had not at any period of his life been guilty of excesses of any kind in the shape of drink or

^{*} Lallemand (op. cit., vol. 2, p. 176) says it was an hypospadias.

man, swarthy, bearded, the father of a family, of drunken habits, obscene in his language; in short, a repulsive brute. The patient said that he believed the attraction this man had for him was in the odor of his sweat which smelt like that of a he-goat ("que par l'odeur de la sueur qui rappelle celle du bouc").

Matters went on in this way for some time until on one occasion this workman went to the patient's private office to ask about something, when a violent desire seized the patient to assault this workman, and assaulted he would have been then and there but for the sudden entrance into the room of the foreman of the establishment. The patient then consulted Fere on his condition. The genitals were normal, except for a shortness of the frenum which curved the penis downward during erection and which was a source of annoyance whenever coitus was attempted. Otherwise he was physically sound. He also suffered from slight symptoms of neurasthenia for which treatment was instituted without any marked results. Fere then advised him to have his frenum cut, to which, after some hesitancy, the patient consented. Six months after this slight operation sexual intercourse with a woman succeeded with satisfactory results, the *ejaculatio precax* disappeared and he no longer had dreams in which men played an important part; in a word, he was entirely cured.

I have given this case such extended notice because it is of interest in several ways: First, on account of the influence which the physical lesion, slight though it was, played in inducing sexual impotence so far as women were concerned, and yet seemed to exercise no influence so far as men were concerned; second, because of the curious mental perversion, not at all uncommon among a certain class of sexual sufferers, as we shall see by and by, which

may be present, but erection of the penis is not possible. This was well exemplified in a case which I saw some while ago, where the penis was simply a gutter formed by the lower portions of the corpora cavernosa and the corpus spongiosum. The patient informed me that he had sexual desires but was totally incapable of an erection.

Hypospadias.—The belief has been, is I think still, prevalent that persons suffering with this defect are *non compotes coitus*, but so many cases are on record showing the opposite to be true that we are forced to the verdict that this form of arrested development, like its congener epispadias, does not certainly induce *impotentia coeundi* (Brouardel, Huguier, Guder, et alii). In Huguier's case the hypospadias was associated with *ectopia vesicæ*. The penis when flaccid had the appearance of a tubercle, one inch in length, which was furnished with an imperforate glans; the urethral canal was entirely wanting. It was composed of the corpora cavernosa which were moderately developed. It was capable of complete erection and then it acquired the length of about three inches. The man had been *capax coiere* ever since he was fifteen years of age, and the orgasm was always followed by a seminal emission. As already stated the urethra was wanting; the urine leaked from the surface of the exposed bladder and ran over the scrotum. This latter was apparently not deformed, but at the junction of the penis and scrotum there was a small linear orifice from which the semen escaped during an emission, and this did not occur in the usual manner as a jet, but it oozed and bubbled up around the base of the tumor formed by the exstrophy.

Guder's case is also an interesting one. The man, except for his genital deformity, was sound. His testes were normal in size and appearance. The penis was 3 cm. long (presumably when flaccid), was slightly curved down-

On a subsequent examination Jamin discovered the varicocele while the patient was on his feet. One curious feature of the case was that when in bed, lying on his back, erections were good, but if the patient turned over on his side and separated his thighs the varicocele, which was absent when he was in the dorsal position, returned and the erection vanished. Operation on the varicocele relieved this condition of things and subsequent coitus was all that could be desired.

In the discussion which ensued on this case at the Société de Chirurgie de Paris, Segond gives a case on the authority of Vidal de Cassis where sexual impotence and a voice like that of a castrated person (*vox castrata*) were both remedied by an operation for a varicocele which was believed to have been the cause of the trouble.

Mugnai's case was similar to that of Jamin.

Varicocele would, however, seem occasionally to produce the opposite effect; viz., to *increase* the sexual appetite rather than to diminish it. Welch gives the history of a case where the libido sexualis was markedly aggravated in a man affected with a varicocele which might readily have passed over into a condition of satyriasis but for the patient's self-control, and which was relieved by an operation on the varicocele.

Elephantiasis Scroti, Hydrocele, Hernia.—These three affections, provided they are slight, do not necessarily interfere with coition, but when the diseases attain large proportions the penis may become, so to speak, embedded in the tissues and even during erection is incapable of sufficient extrusion from the surrounding parts to effect a vaginal entrance, although the power of erection is still retained. Impotence then results purely from mechanical causes which are usually remediable by surgical interference, especially in the two latter cases. When elephan-

ance to a considerable extent. The penis had shrunk to the dimensions of boyhood, the scrotum was shrivelled and he had no sexual desires nor potency.

Filemusi-Guelfi also gives an instance where a man at the age of seventeen years had crushed his left testicle so badly as to lose it. His right testicle was not injured. He married and during fifteen years of married life it is stated that he never knew his wife in a carnal sense. That much he himself admitted, and his wife was proved on examination to be *virgo intacta*. I should be strongly disposed to regard this case as an instance of *sexual frigidity* rather than one of impotence from the loss of his testis, especially as so many cases are on record where a single testis has sufficed for all sexual purposes. Gaulke gives the history of a man who in a fit of religious fanaticism excised one of his testes, leaving the other *in situ*. He subsequently married, was perfectly capable sexually, and had children.

I believe in the majority of cases that *monorchids* are capable of coition and are also fruitful, but in the case of *cryptorchids*, while the same is said to be true in a few rare instances, it must be admitted that the opposite usually obtains. Curschmann gives an interesting case of a cryptorchid where the type of body was essentially feminine, and in whom the penis was very small, being not thicker nor longer than would be normal in a child one year old. It was 1 cm. in length. No testes were found in the scrotum, and there were no sexual desires, nor was coitus indulged in during life. (It is not stated whether any testes were found in the abdomen after death.)

Castrates. Hermaphrodites.—There is no doubt that castrates are capable of sexual intercourse, but for what length of time is an open question. Casper quotes Frank (without giving any reference) to the effect that four cas-

Mondat gives the case of one Velutti, a celebrated singer, who was castrated at an early age by his father, an Italian singer, in order to obtain for him a place in the Pope's chapel. He kept his mistress in London and injured his health by his intercourse with her.

A singular illustration of the power of coition in castrates is afforded by the Skopzen, a religious sect in Russia, one of the tenets of whose creed is emasculation. Pelikan in his brochure on this sect mentions (Liprandi auctore) a rich skopzen living in St. Petersburg who always kept mistresses. Few of the women could live with the man longer than a year, for so salacious and sexually vigorous was he that they retired from the copulative encounter with the stigmata of a ruined constitution ("aber meist mit den zeichen einer unwiederbringlich eingebüsstten gesundheit"). It is noteworthy, however, that not all were as potent as this member of the sect, for it would appear that the male skopzen gradually assumed a feminine type, especially so the earlier in life the castration was performed.

I think, therefore, that we are justified in saying that castrates are within certain limits capable of sexual intercourse, but that the majority, after a longer or shorter time, become impotent, not perhaps from any want of desire but from a lack of physical power to produce a sufficient erection to gain vaginal entrance.

As regards *hermaphrodites*, their sexual capacity will depend upon how nearly they approach the masculine type, for, although we may consider them as for the most part impotent (Tidy), there are yet occasional cases recorded where supposed hermaphrodites have had connection with women (Traxler et alii). In these instances, however, it is probable that the hermaphrodite was really a man, or approached very nearly to the masculine type.

manne grosses bedürfniss nach einem solchen mit einer frau fühle." No mention is made of an ejaculation occurring during coition with women.

Atrophy of the Prostate.—While it is conceivable that when the prostate atrophies there should be a loss of sexual power, the prostatic atrophy probably reacting in a reflex manner upon the function of the testes, I know of no instance in which this condition can fairly be ascribed as the cause of impotence, although Rietema has written a paper upon this subject in which he ascribes impotence to an atrophy of the prostate resulting from chronic gonorrhœa. I am inclined to think that the sexual trouble was probably due to some subsequent effect of the chronic gonorrhœa rather than to an atrophic condition of the prostate.

Strauch, in a paper read at the Fifth Congress of Russian Physicians in 1893, gives the history of one case, among others, of prostatic atrophy, where after each coitus the patient had pain for several days in the loins and perineum, so severe as to oblige him to keep his bed. He had in consequence very materially curtailed the amount of his sexual intercourse. While in this instance it might appear as though there was not absolute impotence, yet there was a very decided condition of sexual debility, Linden's case would go to show that prostatic atrophy might be the cause of a paralytic impotence. He gives the history of a young man of twenty-two, who was affected with diabetes insipidus associated with aspermatism and paralytic impotence, in whom there was almost no prostate at all. In this case physicians were in vain.

Stricture of the Urethra.—Although this cause has been denied as accounting for sexual impotence, my experience leads me to believe that it may be a direct cause, especially in those cases where the stricture is seated far back,

the functions of the sexual organs are concerned. A man may admit that he cannot run as fast as he used to; that he cannot endure fatigue as easily nor recover from it as quickly; that he cannot stand the wear and tear of daily life as cheerfully as formerly, but he will not admit, or only very reluctantly, that he is not as good sexually as he used to be, and it is this insane desire to appear better than they really are that often tempts men to strain their capacity beyond the recuperative point and thus become permanently impotent when, with a little care and less pride, they might have kept their sexual functions in fairly good working order for several years to come. That extreme old age is not necessarily a bar to the accomplishment of the sexual functions I have already pointed out in a preceding portion of this work, and it is not so long ago that I saw an old gentleman who acquired syphilis in his sixty-fourth year. When I saw him last he was in his seventy-fifth year; he was perfectly *capax coiere*, and he then informed me that he was capable of performing and did perform the act every two weeks, and this, not from any false sense of pride, but rather because the desire seized him. At other times his sexual functions were quiescent and he was not in the habit of spurring them on unduly. This I believe every man, if he were careful and heedful of his sexual functions in his youth, could do, retaining his powers of copulation to a green old age; but it is the story of the prodigal son over again—when he had he wasted, and when he had not, he fed on the husks which the swine did eat. Notwithstanding these exceptions, however, it is perfectly true, as Vecki says, that senile impotence begins slowly but surely, usually about the fiftieth year, and with the sixty-fifth year sexual desire is extinguished, and in the large proportion of men whom one meets, I am inclined to think this statement is

and plenty of exercise, besides paying careful attention to his general health. He was also sent out of town for a change of air. In three months' time it was found that he had lost weight considerably, was more capable of taking exercise, and that he had no further occasion to complain of inability to perform his part as husband.

Hammond also gives the cases of two gentlemen in whom obesity was the cause of sexual impotence. Each of these men "though not exceeding five feet eight inches in height, weighed three hundred and two hundred and eighty pounds respectively. There had never been excess in either case; both were married, and both with the inception of the obese state began to fail in the power of erection until, eventually, sexual intercourse was from this condition rendered impossible. It will be understood here that the difficulty was not a mechanical one of a protuberant abdomen, but one which related entirely to the power of erection.

"Eventually, both these gentlemen were cured and the result established the correctness of the opinion given that the impotence was the result of a constitutional cause."

Under proper treatment the weight was reduced, sixty pounds in one case and forty-seven in the other, not only with the effect of restoring the virile power but with greatly improved health in other respects.

Emaciation.—It would seem reasonable that a person who was very weak and debilitated should suffer in these parts as well as in any other portion of his body, and very likely such is frequently the case, but it would be as dangerous to argue that all emaciated persons are sexually feeble as it would be to suppose that every fat man is impotent. Rosse (auc. Friederich) tells about a miserable, anæmic, little man who had been twice married and, not content with that, also kept a mistress. It appears he

was a subject of acute anxiety, that his wife would not be a spectator of scenes of violent passion; and I have, unfortunately, given the subject all the care of his own. Regarding it as "one of those things" which was so weak and uncharacteristic as to be made a subject of sitting judgment, for this season last night, comes with "the broken woman" who left the room after my last arrival. Possibly it may have been an instance of being a long time a while, but is that as I may, it would seem that there is no class of men, tall or short, fat or thin, weak or strong, which necessarily, from any peculiarities of constitution, is prevented from indulging in sexual intercourse.

CHAPTER X.

SEXUAL IMPOTENCE.

(Psychical Causes).

ANOTHER cause of impotence in the male may occur from conditions precisely opposite to those we have just been considering, that is, the impediment may be purely one of the mind and not of the body, this latter being functionally perfectly sound and capable of performing the sexual act; for example, there may be, as not infrequently happens in some men, a decided *repugnance to women*. The man's sexual passions may be so completely in abeyance or possibly absent that he has no association whatever between women and the sexual act, regarding the female sex with purely platonic feelings. In these persons generally the libido sexualis is almost entirely absent and, while in some instances there may be occasional erections, there are very few if any pollutions nor is the patient given to masturbation. Indeed, the act is often so repugnant to him that its indulgence affords him no pleasure nor gratification. He is, to all intents and purposes, asexual; furnished with all the physical characteristics of a man, but with none of man's attractions or desires for the opposite sex. These are the cases which are known under the name of "*sexual frigidity*," but notwithstanding this coldness and almost complete absence of sexual desire it occasionally happens that one of this kind will get married, even though in some instances this sexual indifference is associated with an imperfect development of the

generative organs. Thus Oesterlen gives the case of a widow with six children who took for second husband a man fifty-two years of age, physically strong and powerful, but whose genital organs were not more developed than those of a boy. A suit for divorce was begun on the ground that he was impotent. On examination the penis in its relaxed condition was found to be 4 cm. long, 3 cm. thick, and it was admitted that in its erect condition the penis was fit and perfectly capable for copulative purposes. The testes and scrotum were normal. The man, on his side, stated that he had never felt any desire whatever for sexual intercourse. He was entirely inexperienced in all matters relating to the sexes, and indeed showed a most complete ignorance with regard to the sexual organs of the female as well as the manner of copulation.

Hammond also gives a detailed account of two of his patients in whom entire absence of sexual desire existed (apparently congenital in origin). In one of these patients erections of the penis were accompanied by a violent inclination for drink instead of any sexual desire. This patient ultimately died of cerebral congestion. To use Hammond's own words, ". . . these are of so interesting a character that I do not hesitate to give the details.

"Mr. W., aged thirty-three, a strong, well-built, and apparently healthy man, consulted me December 11, 1860, in order, as he said, to ascertain if anything could be done for him. He stated that he had never experienced the slightest desire for sexual intercourse nor any venereal excitement, though the latter he had repeatedly, by reading libidinous books and association with lewd women, endeavored to produce. So far, however, from the wished-for effect resulting, the consequence was always the opposite, his repugnance increasing, and if the attempts were persevered with, nausea and vomiting, ac-

accompanied with nervous and physical prostration, ensued. He declared that he had never practised masturbation, but that since he had attained the age of seventeen he had in his sleep what he supposed were seminal emissions, about once in two or three months. Upon one occasion he had persisted in the attempt at intercourse, notwithstanding the absence of desire and the unpleasant mental and physical phenomena which were produced; but though there was a vigorous erection caused by manual solicitation on the part of the Circe upon whom the attempt was made, this was at once dissipated as soon as entrance was attempted. He was then about twenty-two years of age, and the experiment taught him that there might be pleasure in masturbation. As I have said, however, he was very emphatic in declaring that he had never indulged in this vice; and as his language and manner were frank in the extreme I have no reason to doubt the truth of his declaration. Frequently, as he had informed me, he had endeavored to excite desire by imagining erotic scenes of various kinds, but though erections were produced, there was no desire. On the contrary, feelings of repugnance and disgust were at once excited.

"Here, apparently, was the ability to experience erections from psychical and tactile excitations, but the sexual appetite appeared to be undeveloped, and in addition there was the remarkable idiosyncrasy of disgust instead of pleasure being excited at the idea of copulation. But for this latter circumstance the patient could undoubtedly have mechanically gone through the act of intercourse, and perhaps have experienced pleasure from the operation.

"There were many reasons why this gentleman should marry. There was a considerable property held in trust for any children he might have, but which without offspring of his would go from his family partly to people

strangers to him and partly to certain charitable institutions. And again, strange as it may seem, he liked the companionship of women and was anxious to have a home of his own, and a wife with whom he might at least associate in a platonic way. In his present condition he felt that all these things were impossible, and so he had come to me hoping that in the resources of medicine there might be something that would alter his nature so as to make sexual intercourse possible to him, even if the development of desire was out of the question.

"I saw no way of doing this, however, unless it might be possible for him to accomplish the sexual act notwithstanding the disgust, the faintness, the nausea and vomiting, and by perseverance to overcome the idiosyncrasy. He promised to make the attempt repeatedly, but he reported about a month afterward that the plan of treatment was impossible. He went into the Civil War, and was killed at either Antietam or Gettysburg.

"In the other case the patient, a man twenty-seven years of age, had never experienced sexual desire, though the organs were of full size and well formed. Erections were readily produced by friction of the penis, or by the application of heat, or even by lying on the back; but instead of the ordinary venereal desires being excited, there was an overwhelming desire to drink alcoholic liquor in large quantities, and a drunken debauch was the consequence.

"Toward women there was a strong feeling of disgust, and a still more powerful disinclination to sexual intercourse. Many times the attempt to effect entrance had been made while an erection existed, but at once the penis became flaccid. In this instance there was the reciprocal effect of erections being produced by the desire for alcohol, and under such a circumstance masturbation had often

been practised. This patient eventually died comatose during a severe attack of cerebral congestion."

There is another class of cases in which, however, while this distaste for women is present, there is no lack of sexual desire, but unfortunately it is manifested in a perverted condition, to wit, in a *liking and admiration for the male sex*. These men, while entirely impotent in connection with women, are virile as far as their own sex is concerned, and will very often find not only sexual pleasure in the company of other men, but from sexual instinct will also indulge in habits of pederasty. Of course, under these conditions, the man comes under the curious class of cases which are now well recognized in genito-urinary as well as in psychopathic medicine under the name of "sexual perverts," in whom there is, apparently, no lack of intellect or brains; indeed, there is no degeneration save in this one respect, and there seems, according to our present code of morals, to be complete perversion. I, of course, need not remind my educated readers of the fact that celebrated men whose names have been handed down to posterity from ancient times as synonyms of sagacity and wisdom are said to have indulged in this habit, and, indeed, we know from studying the literature of the Greeks and the Romans that it was a well-recognized form of amusement—this love of boys—and that men of respectability were not necessarily considered outcasts because they indulged in this peculiar form of sexual refreshment. At the present day, however, there is a prejudice against it.

Fright.—The act of copulation is one of the most remarkable functions in the human body and it is one which, as John Hunter very truly, albeit quaintly, says, "is an act of the body the spring of which is in the mind, but it is not volition, and according to the state of the mind, so is the act performed. To perform this act well the body

exercise in producing a condition of temporary impotence. A gentleman some while ago consulted me with the following history: He had been engaged for a long time in overcoming the virtue of a young woman whom he ardently desired to possess, and after a protracted siege he gained the desired permission, but found to his horror and disgust that when the time came for action he was *non compos*. Do his best he could not get an erection. Being a man of some sense, he thought the matter over carefully and, while much disgusted and perturbed at this condition of affairs, he felt sure that it was probably temporary and came to me to ask what should be done. I advised him to suspend all attempts at copulation for a while, but he was to see the young woman continually and later on to make the second attempt, and not to feel disturbed if even the second trial should prove a failure. The second experiment was made and resulted in nothing; an absolute fiasco, perhaps helped along by the young woman's sarcastic remarks as to the great trouble that he had taken for nothing. This condition of affairs worried the man still more, but I urged him to try a third time under similar circumstances, and on this occasion I borrowed a hint from Hunter. The man was directed to lie in bed with the woman, but to make no attempt whatever to touch her, no matter how much he desired to, nor how good his erection was, I feeling perfectly certain that he would have an erection, and that if he did he would throw my advice to the winds and do his duty, which proved to be the case. He followed out my instructions, supplementing them, however, with a supper before the attempt; everything went smoothly and his impotence was entirely relieved.

Again, copulation requires that a man's mind should be not only in perfectly *sound condition*, calm, and confident, but the *surroundings* must also be such as to *lend them-*

selves to the accomplishment of the deed. A singular illustration of the effect which mental impressions exercise upon the ability to properly perform the sexual act is furnished by Roubaud. The history is that of a young man who was seduced at the age of fourteen by a girl older than himself, who was a friend of the family. This young woman was a blonde, wore her hair in curls, and, inasmuch as the pleasure partook of the nature of forbidden fruit, in order to prevent inconvenient surprises, coitus took place when both parties were fully dressed, the young woman being in her walking boots and wearing a silk gown. This relation continued for some while, until the young man was sent to a military school and from there transferred to the army, but he found that his sexual powers, when he came to exercise them as a grown man, were confined to a certain class of women, to wit, blondes. A brunette had no sexual attraction whatever for him, and to see a woman undressed and in her night-gown was sufficient to extinguish every trace of passion, supposing him to have any at the time of the proposed connection. He found himself, therefore, in a position in which the following conditions were necessary: (1) the woman must be a blonde, (2) she must have curls, (3) she must be fully clad, with boots and a silk dress on. In other words, she must be in precisely the same condition as the Delilah who took his virginity.

Fürbringer cites two cases somewhat similar to the above, one of whom was a young man about town ("ein junger bon-vivant"); the other a "luxurious colleague." In the former it was a necessity for the man's complete sexual enjoyment that his wife's underclothing should be trimmed with lace, and of the latter Fürbringer writes that the wife of this "colleague," who usually was by no means a fascinating person, became almost a charming

woman in the husband's eyes if she was dressed in silks and satins.

Hammond also gives a curious instance of this same artistic influence. "The subject was a foreign gentleman about thirty-five years of age, whose whole life had been devoted to the gratification of his sexual appetite, and who seldom kept less than three mistresses at a time. When thirty years old he had married, but soon afterward his wife left him in consequence of his failing sexual powers and her objections to his mode of life.

"Ordinarily he was unable to have an erection without obliging her to clothe herself in various fancy costumes, and to assume different positions, while he would sit and look at her till the desired result was obtained. Again, he would cause her to dress in a short, colored chemise, and colored silk stockings, and then while she lay on a lounge he would regard her sometimes for over an hour before erection ensued. After a time this procedure failed, and he then resorted to the expedient of dressing her in the costumes of different nations, Persian, Hungarian, Swiss, etc. That these expedients also eventually failed there can be no doubt."

Again, some men are *unable* to perform the sexual act *at certain times*. Fürbringer cites an instance of a man who could not copulate at night, nor even by artificial light: only in the day-time was he potent; while others require that night should lend its friendly shade in order to sacrifice properly to Venus Copulatrix.

In addition to the influence of light and darkness, it would appear as though the *surroundings* must be *familiar* in order to conduce to venery, and where they are not, the patient for some inexplicable reason is unable to properly play his part. Hammond gives such an instance in his book, where the patient, who up to the time that he

old house to the one he occupied in the new, and to otherwise fit up the room as nearly as possible like the one to which he had been so long accustomed. He at once saw the propriety of this suggestion, and, adopting it, had no further trouble. Piece by piece, after a few months, he displaced the old furniture, and this without any sacrifice of his normal desires."

Dislike for Particular Women.—It sometimes happens that men who are perfectly capable of cohabitation with the majority of women, find that there is one particular woman who appears to be unsuitable and to whom they have a most decided repugnance, and this dislike may not only be due to physical causes, such as the illness or deformity of the woman, but it may also be owing to some psychic repulsion; sometimes without any apparent cause. A man may take a prejudice to a woman and any attempt to have connection with her fails absolutely. It is not infrequently the case, odd as it may seem, that a peculiar *smell*, as, for example, a particular perfume that the woman may use, or even her natural personal odor, may be the cause of the aversion, and it is a well-known fact that the sexual passions in some persons are very strongly guided by their sense of smell (*cf.* p. 245), approaching in that event somewhat toward instinct in animals, many of which are guided in their sexual desires by their olfactory faculties.

Marital Indifference.—It sometimes happens, as Acton has pointed out, that men take a dislike and even a disgust to their wives, often consequent upon an entire want of sexual desire or of sexual enjoyment in the act in the woman herself, and I have heard of one instance where this condition was due not only to passive indifference but to active discouragement on the wife's part. The woman conceived the conjugal act to be vulgar and indecent and

took occasion, while the husband was exercising his marital rights, to indulge in running comments upon the performance. This course, naturally, did not tend to produce sexual harmony and the unfortunate man became, so far as his wife was concerned, absolutely impotent, loathing the very thought of intercourse with her, although with other women he was perfectly capable of enjoying coitus. Sometimes this condition may be due to the fact that the man possesses an altogether exaggerated estimate of the goodness and saintliness of his wife, and the feeling of sacrilege evoked by such a sentiment suffices to produce more or less impotence, sometimes indeed complete, as mentioned in Hammond's book where he narrates the history of a man who, entirely potent previous to his marriage, found that after marriage he was of no sexual account whatever, simply because, as he stated to Hammond, "it was profanation for a man like him to subject so beautiful and pure a woman to such an animal relation as sexual intercourse. She was too good, too delicate for a mere animal like him; he could not desecrate her beautiful body by any such vile act," etc., etc. It is worthy of note that by the exercise of tact on his part, together with the woman's assistance, Hammond was enabled to drive this quixotic idea out of the man's head, thus curing him of his impotence.

Superstition.—It seems hard to believe that in the present matter-of-fact and skeptical age, superstition should play any part in this question of impotence, but Hammond gives two curious cases, personal to himself, where, in one, he was consulted by a man for the relief of an impotence with which he believed his wife had affected him in order to keep him moral during a visit which he was about to make to New York. "She had," he said, "given him a singular glance as he left the house. He felt a peculiar

thrill pass down his spine to his testicles, and after that erection was impossible." Perhaps it was a case of guilty conscience rather than superstition. In the other instance the man stated that the woman had laid a spell upon him because he had married some one else instead of herself and that she, "out of revenge, had caused the loss of his sexual power." It would appear that this singular piece of magic took place "on the fifth night after marriage. Up to that time he had done his part to his entire satisfaction, but on the fifth night the disappointed woman, concealing her jealousy, had invited himself and his bride to take tea with her, and upon their return home he found himself in the condition mentioned." After listening to such rubbish as this, one feels tempted to exclaim with Puck, "O Lord, what fools these mortals be!"

Another cause, also given by Hammond, is owing to an insane belief in a total *disappearance* of the *genital* organs, although it is very evident to the sight that there is nothing whatever the matter with the genitals. The case which Hammond narrates, and quite in detail, is of a man who kept a record of the condition of his genital organs and sexual feelings, and no one reading the account which Hammond publishes can help being struck with the fact that the man was mad, and that it was one of those cases of sexual disturbance due to lunacy.

Intellectual Studies.—There is no doubt whatever that the functions of the brain and the functions of the sexual organs cannot be exercised at the same time. Severe mental work and intense application to literary pursuits are enemies of copulation, and many instances in proof are found in medical literature. One singular instance is given by de Caux of a mathematician who had always been diverted from the complete performance of the sexual act by the recurrence to his mind of a problem in geome-

try or of some equation which had occupied him during the day. His sexual inability was cured by the unique prescription of instructing his wife to make her husband half drunk before she permitted him to copulate with her, upon the theory, that in such a condition he would think less of geometry and more of coition, and the result seems to have justified the theory, not only on one but on several occasions, for he became the father of many fine children of both sexes. Nor need it be an abstruse or serious subject to induce interference with the proper performance of this function, for a case is reported where a man's sexual powers were materially interfered with because, while indulging in copulation, he chanced to think of something ludicrous that had happened to him or that he had heard during the day (Hammond*).

Phantasmagorial.—I have coined this word, for which I make due apology, to represent those cases where sexual intercourse can only be indulged in by bringing to mind some image entirely foreign to and separate from the act under consideration. Charcot and Magnan report a ludicrous instance of this type of disease as occurring in a man who, while a boy, had been in the habit of sleeping with a female relative many years older than himself, and who was wont to wear a night-cap. He had also been in the habit of seeing an old serving-woman, while undressing for bed, wear a similar head-dress, and at such times in both cases he was conscious of a peculiar excitement of the genital organs, accompanied by an erection. Being at the time only five years old, of course no emission took place, but later on the very idea of an old and wrinkled woman arrayed in a night-cap was sufficient to produce a sexual orgasm; the sight of a night-cap by itself caused no disturbance, but contact with one

* It is rather cases of aspermatism than of impotence.

caused erection and sometimes an emission. Masturbation which he had tried as a youth afforded him no gratification, nor had he any inclination toward sexual relations either with men or women. At the age of twenty-two he married a young woman a few years his senior and on attempting to consummate the marriage found himself impotent. The first night passed and nothing done, and the second night, in a fit of desperation, he recalled the image of the old woman in her night-cap when a strong erection ensued and he was enabled to properly perform his marital duties. While he deplored this peculiar condition, it appears that he was never able to alter it. Let me say that he came of an eccentric family, and the sequel of his history shows that subsequent symptoms of deranged cerebral action developed, so that this man probably was not right in his mind to begin with. But Hanč gives a case, to which I have incidentally alluded in another portion of this book, where a man twenty years of age who, ordinarily healthy and not guilty of sexual or other excesses, had, in consequence of horseback riding, brought on a greater or less tendency toward pollutions, one of which was diurnal. He later on had nocturnal pollutions which were always associated with the presence of animals. Hanč says he was a great rider and especially fond of horses and dogs. Later, whenever he attempted coitus, it was unsuccessful on account of the absence of erection until after he had thought of a horse or a dog or a smart, well set-up rider; then he could have connection perfectly. It is well to note this patient entirely recovered under treatment and could have coitus without thinking of horses or dogs.

Tambroni records the history of a young man who showed no nervous eccentricities until the age of nineteen, at which period the following extraordinary illusion ap-

peared to be necessary in order to produce an orgasm during either coition or masturbation. This consisted in picturing to himself a man kicking a young girl, a phantom which was apparently the result of the following incident: When he was eleven years old he saw in a paper a picture representing a father kicking his daughter. This picture made a strong impression upon him, and at the same time he felt a curiously voluptuous sensation. No immediate result apparently followed this impression which lay quiescent for several years, to become later on the only method by which he could practise either copulation or self-abuse.

Sexual Perverts.—Although this class of patients properly belongs to the domain of psychopathic medicine, I shall make mention of them here because, while such men are potent in an abnormal sense, they appear to be incapable of proper sexual relations. This is particularly noteworthy in the case of *pæderasts*, who, able to perform their part with their male associate while playing an active rôle in the performance, yet have a decided repugnance to sexual intercourse with the opposite sex. Indeed, so far as they are concerned, these men are impotent and frankly confess, as I have stated in an earlier part of this work, that they much prefer the male to the female. The same is often true in that class of perverts known as *sadists and masochists*, in the former of whom there does not seem to be such a marked degree of impotence as in the other cases; indeed, the *sadist* is perfectly able to have connection with women and not infrequently does, but it is a necessary concomitant of the sexual act that he must injure the object of his amatory devotion, and this may extend not only to bruising and beating her, but sometimes even to wounding her, the presence of blood being a necessary ingredient in the enjoyment. He cuts and maims the person with whom he

is copulating, and this is also true in some *sodomites* who, averse to the ordinary methods of copulation, resort for sexual gratification to members of their own sex. This may also be practised by boys, entirely apart from any question of sexual relations, either with playmates of their own sex or with girls. The perversion is the same in principle, but in the case of boys the pleasure is derived from masturbation. Vecki gives a singular instance of this degeneracy. The mother of a boy, B., aged fourteen years, noticed that her son's body was covered with bluish discolorations, particularly upon the upper arms, the loins, and the thighs, and upon questioning him closely, she found that his friend, a lad fifteen years of age, P., the son of a prominent and rich house, had been in the habit of bribing him (B.) with money as he was poor, to allow the latter (P.) to pinch him as hard as he pleased. Sometimes the pain was a little more than B. could stand without crying out, whereupon P. would become extremely excited, and while beating his victim with the right hand, would plunge his left into his trousers pocket and make to-and-fro movements. Vecki examined this boy P., and found that he was a sufferer from epilepsy; albeit he was in general a bright, quick, and clever boy, yet at times he would become extremely disobedient, obstinate, and passionate, and in addition he also found that P. was a confirmed masturbator. It immediately became clear to Vecki upon inquiry of the boy what this abuse of his friend meant. It was simply that, fond as he was of his friend, this abuse gave him a special pleasure sexually, for the ejaculation which took place occurred more rapidly and with more intensity if he injured his friend, than it did by simply masturbating. The family history was as follows: P.'s great-grandfather and one uncle on the mother's side died in a mad-house. His mother suffered with hysterical

symptoms; the father was a well-known *roué*. Two sisters died in early childhood. Vecki says that he is persuaded that this boy, whom he had under observation for a long time, who had been carefully watched and who had been treated by various physicians, would, notwithstanding all care and attention, come to a sad end.

Sometimes this derangement may be carried still further than mere *injury* or *wounds*, and end in *murder*. Dragomanow narrates such an instance as occurring in a peasant. The history is as follows: A nine-year-old peasant lad was sent by his parents to a laborer, also a peasant, who was working in a field. Neither of them came back. On the next day the boy was found in the field, stretched dead upon the ground, and near him a leather strap, a bloody pocket-knife, and two testicles. In the immediate neighborhood (in a rye field) the laborer was caught. He stated that an irresistible impulse came over him to kill the boy. He threw the leather strap about his neck, and when he saw that the boy was dead, he said he emasculated him in order to revive him. Investigation revealed the following facts:

This laborer came of a healthy family, and outside of his sexual disturbance he appeared to be perfectly normal. According to his own statements he had never felt the slightest inclination toward the female sex. Four years previously he had married a young and very pretty woman, had slept with her for a whole year, but had had no carnal relations with her, having neither sexual desire nor erection. This went on for a year, and notwithstanding the energetic solicitations of his wife he remained absolutely cold. She then sought a lover, but this did not disturb him in any way, and he appeared perfectly indifferent, although he had several times clear proof of the intimate relations of his wife with other men. From

his fourteenth year he had felt an inclination toward males, but only boys. The handling of the genitalia of boys always gave him an erection and ejaculation. He had especial sexual pleasure *si quando pueri membrum in orem suum ponere et sugere posset*. The handling of the sexual organs of a stallion also excited him, but less so than with boys. In the field on this occasion he played with the lad, of whom he was fond, *et dum pueri penem suxit, quod saepe antea fecit*, the idea came over him to kill the youth and cut out his testes. How he did this he has no remembrance. The termination of the case, briefly, was that after a judicial examination he was decided to be insane and sent to a lunatic asylum.

The *masochist*, on the other hand, resorts to injuries inflicted on himself by the object of his devotion, having no intercourse whatever with the woman, but deriving all his gratification from being injured by her.

One of the most singular instances of this species of perversion is narrated by Dr. Cox, of Colorado, which, were it the only one reported, would seem almost incredible. Briefly stated in the doctor's words, it is as follows: "This man has a wife and several beautiful children, and within the sanctity of his home, where he is always to be found during the evening, his precept and example are so noble and pure and good that his influence is felt and praised by all of his many friends and admirers. But at stated periods, away from home, he is a holy terror to the biblical standard of those who have the promise of seeing God, an angel of mercy to the fast women whom he patronizes, and an insoluble enigma to all mankind.

"He has never been known to cohabit with a lewd woman, or to speak an immodest word; but he is a regular visitor, and, in his peculiar way, a liberal customer at a certain house of ill repute. His custom is to go early in

the afternoon, select two or three of the largest girls in the house, and repair to a private room and lock the door. Here he divests himself of every stitch of clothing, from the waist upward, but never removes his trousers or boots. Then, lying prostrate upon the floor, with his hands lightly crossed over the abdomen and his eyes tightly closed, he commands his companions to walk over his naked chest, neck, and face, taking care to stop at each step to grind his flesh with the heels of their boots. After this process has continued for some time, he begins to buy the wine for the girls to drink, but religiously abstains from taking a drop himself.

"About the only noticeable interest he takes in the proceeding is an occasional demand for a heavier girl, or for some means by which they can increase the severity of the punishment. The process goes on uninterruptedly for two or three hours, at the end of which time he will have ordered a dozen or more bottles of wine, besides paying the fair trampers handsomely for their time and trouble.

"One of his diversions is to make one of the girls stand on his chest with her entire weight on one boot-heel, and have the other girls spin her around till his flesh is torn and bleeding. He will also frequently direct a girl to place one foot across his eyes, with the boot-heel resting in one orbit and the other foot across his throat. He will keep her in this position for five or ten minutes, thus sustaining a weight of one hundred and fifty pounds or more. It would be impossible to mention all the means of torture that this man has invented and submitted to, but I merely mention these few facts as being samples of dozens which I have heard of.

"At the conclusion of one of these *matinées*, our hero puts himself through a course of rubbing his injured spots

with his naked hands; and a very strange part of the story is the fact that by this simple process his bruises, scars, ecchymoses will almost entirely disappear within a very few minutes.

"Having thus rubbed himself back to a state of presentability, he resumes his clothing, pays his bill, and takes himself off to the marts of trade, but only to return and repeat the strange entertainment in about a week."

Fetichists, on the other hand, are usually impotent so far as either sex is concerned, sometimes resorting to masturbation, and seldom having any inclination for man or woman, but deriving their sexual gratification from the fondling of certain articles of feminine apparel, particularly the underclothing; thus *drawers, stockings, shoes, aprons, and handkerchiefs* (Beck, Hammond, Charcot et Mangan, Moll) have all served their turn in this extraordinary perversion of the sexual passion, and Moll also gives the history of a youth where a *rose* was the fetich which produced sexual excitement. This curious neuropathic condition seems to have been induced in the following way: While the young man had always taken extreme interest in flowers, and even as a child was in the habit of kissing them, he never was aware that they produced any sexual excitement in him until his twenty-first year, when he made the acquaintance of a young lady to whom he became secretly engaged, and who was in the habit of wearing a large rose in her jacket. It appears that the relations between these two never passed the bounds of propriety. This fetichism led on his part to most fantastic performances with roses, which he would buy, kiss, and take to bed with him, and during the process of kissing these roses he would frequently have erections, but apparently these erections were never followed by ejaculation.

Krafft-Ebing (auc. Pascal) gives an extraordinary in-

stance of a man who derived sexual gratification from resorting to a house of prostitution and *cutting the bang* of a particular woman in the house. This he did periodically, once a month, having no carnal relation with her, but deriving his orgasm and sexual delight (which were said to be great) in cutting her bang, when he would leave without doing her any injury.

Krafft-Ebing, furthermore, gives the particulars of a case within his own knowledge, of a man in Vienna who regularly visited *puellas publicas*, not for any purposes of intercourse, but simply to *shave* them. He would lather their faces, remove the lather with a razor, but would not injure the girls in any way, nor would he cohabit with them. His sexual excitement and ejaculation took place from this extraordinary tonsorial operation.

These two cases are akin to actions which occasionally take place, instances of which are reported in the newspapers, perhaps without knowledge of the true meaning of the performance. I refer to men who go about *cutting off women's hair*, particularly if it is braided, and those who *slit, tear, or disfigure women's clothing*. One instance of this kind has lately been published in the papers about a young German who operated in New York, Philadelphia, and Washington. Many of these perverts are fairly intellectual and well educated, but sexual gratification is found, why it is almost impossible to say, in either cutting off hair or in destroying dresses. The same is true in some instances from *stroking velvet or furs*.

Then, again, there are some who find delight in having *sexual relations with birds and beasts*, while others derive their pleasure merely in *watching the death struggles* after animals have been throttled or decapitated (Lombroso). In some perverts, again, a constant libido sexualis is present which manifests itself either in *indecent exposure*

of the person or in *sensual* and *improper proposals* to women, without any possibility of performing the sexual act. This is oftentimes due to some physical cause; thus, Welch reports the notes of a case of satyriasis, due to a varicocele, which disappeared after an operation, and Rutgers of another, where this condition was relieved by the use of large doses of iodide of potassium internally. These cases are not to be confounded with priapism, which not being strictly a condition of sexual debility I shall not consider in this work.

NERVOUS CAUSES (NEURASTHENIA).

In the preceding portions of this book, in the chapters devoted to pollutions and spermatorrhœa, a great many of the symptoms of this form of sexual debility appear closely interwoven with the manifestations of those disorders, and in taking up sexual neurasthenia as one of the expressions of impotence I shall perhaps repeat what I have already written when touching upon the earlier subjects.

Neurasthenia is not strictly a *disease by itself*, but it is either a symptom indicative of some underlying affection which causes it, or else it is a group of symptoms which produce certain effects, and it is sometimes difficult to disassociate the neurasthenic condition from the causes which give rise to it. As regards

Definition it may be considered as a condition of nervous debility which, in the majority of cases, is reflected from some *local* centre of irritation, be the same genital or digestive, or it may be *general*, depending upon some central cause either in the spine or brain, and this condition again may be either congenital or acquired. Beard perhaps expressed it well when he considered it as a condition of *nervous weakness*, for that it certainly is. It is a state in which the nervous exhaustion being rapid

and recuperation being neither speedy nor permanent, a persistent condition of nervous irritation and debility is established. The symptoms are characterized by an excessive excitability followed by quick exhaustion of the sexual strength, and this condition may be associated either primarily with the phenomena of sexual life, or else these phenomena may receive the imprint as a secondary neurasthenic condition derived from some other source than the sexual organs, but in which the sexual symptoms are the predominating features. There are, of course, many varieties of neurasthenia, but the one which interests us more particularly is that which goes under the name of *sexual neurasthenia*. Eulenberg considers that the *neurasthenic is not made, but is so*; that is, he is either born a neurasthenic or with the symptoms of neurasthenia, and these develop later on, according to circumstances or the patient's surroundings; lying quiescent until the age of puberty and then being called into activity by various causes, such as books, pictures, or statues of a more or less libidinous character. Naturally sexual neurasthenia would not be present in persons under puberty, and the same is true, within certain limits, of old persons. In these latter, however, when the disease occurs, it is much more likely to assume the shape of *satyriasis*, in which the libido is present in an exaggerated form without the physical power to gratify the desire. The age at which *neurasthenia sexualis* is commonly seen is between the *twentieth and fiftieth year*; in other words, *during the man's sexual life*.

Causes.—The causes which induce this condition may be twofold, *local and constitutional*, but even where the cause appears to be local, it is very probable that there is an underlying constitutional condition which induced the neurasthenic symptoms. The principal local causes are

excessive masturbation, gonorrhœa, sexual excesses, coitus interruptus, and, I believe that in many instances, in this country at least, *chronic alcoholism* plays a prominent part in bringing about this variety of neurasthenia. In the chapter on masturbation it was noted that in those patients in whom this practice produces the various symptoms which have been ascribed to this bad habit, there is probably an underlying constitutional imperfection which exaggerates the natural depression, both physical and mental, so usual after copulation, and it is in such cases that the worst results from this practice are noted; but I stated as my belief that if the masturbator was of ordinarily sound constitution, both physically and mentally, the results of the habit are by no means permanent, nor are they, in the majority of cases, necessarily grievous. This view I believe to be, in the main, correct, but of course, if a person is born with a damaged nervous system, the existing effects of masturbation will undoubtedly produce much graver and more serious symptoms than in another person who is tolerably sound in both body and mind; first, because although the results in themselves are not necessarily bad, the tendency toward abuse of this habit is increased and the inability to resist and to check the practice is much more impaired in the neurasthenic than in the healthy man.

The Germans lay more importance upon *gonorrhœa* as creating the various phases of sexual debility than seems to me to be warranted, judging from my experience in this country. Undoubtedly, in some cases an uncured clap may light up such a train of symptoms as to lead to diurnal pollutions, to spermatorrhœa, or to impotence, especially where the disease has become firmly seated in the deeper portions of the urethra, or where the accessory organs have been implicated, as, for example, the

prostate, the bladder, or the seminal vesicles. Under such circumstances it is quite conceivable that a condition of nervous irritability may also be developed sufficient to produce a state of sexual neurasthenia, but in this country I do not think that gonorrhea plays such a prominent part as do sexual excesses, especially where these excesses are conjoined with habits of persistent and continuous drinking.

As regards this matter of *sexual excess*; it causes a condition of nervous depression and weakness which, even in the constitutionally sound, requires some time to recover from, while in those who are physically or nervously weak, the amount of exhaustion may be more than the patient can rally from at once, the irritability becomes more pronounced and a permanent neurasthenic condition ensues, which is sometimes out of all proportion to the cause which induced it, but this varies very much in different persons. A moderately strong person may continue his wrong habits for some time and yet not suffer materially nor permanently, whereas another man who is weaker and less able to rally from the exhaustion, will present all the symptoms of nervous debility, even though the aggregate of his excesses may have been comparatively slight. This I believe to be true where *coitus interruptus* is practised, as well as in those cases in which the sexual act is completed normally, hence I am not inclined to think that the neurasthenic condition occurring in persons who indulge in withdrawal is due so much to the withdrawal as it is to the frequency with which copulation is performed, and patients are spurred to abuse this function by the irritation which the checking or retention of the semen produces in the deeper parts of the canal whereby a continuous hyperæsthesia is induced. This causes a constant desire for sexual intercourse, and the irritation generated

by the retention or prevention of the emission is increased with each repetition of the act, so that a vicious circle is established, the prostatic or urethral irritation inducing repeated coitus, and each coitus increasing the attendant irritation and inflammation of the canal. In *chronic alcoholics*, I believe, much the same condition of affairs obtains, particularly in the early stages of the disease. The use of liquor stimulates sexual desire, desire begets indulgence, and the greater the indulgence the greater the nervous depression, which is still further increased by the attempts made to recruit by the use of alcohol, so that later on these persons become the subjects, not only of neurasthenia, but of chronic sexual impotence, and are the hardest of all cases to treat.

The methods employed to prevent conception by *the use of condoms* do not, I believe, exercise any bad influence upon the sexual organs, provided copulation be completed in the normal manner and no attempt made to withdraw at the time of the orgasm, because, with the exception of the very thin covering over the male genital organ, I can see no difference whatever between coitus with and without a condom.

Besides the causes enumerated above there may be local physical reasons for sexual impotence which in a person who is perfectly sound and mentally well balanced would produce no disturbance, but which in a nervous person would give rise to a great deal of trouble. *Balanitis*, particularly when associated with retention of the *smegma preputii*; *phimosis* when tight and associated with adhesions to the glans penis, or with concretions beneath the foreskin; *stricture of the urethra* (Lagelouze); *varicocele*; *prolonged* and *hard riding* on horseback will produce a condition of urethral or prostatic irritation which may lead to neurasthenia and to consequent sexual impotence,

but it must be remembered that in speaking of these causes I do not intend to say they would produce this condition in all persons. In healthy men they probably would not, or at the worst they might produce a temporary irritation which would be rapidly relieved and probably cure itself, while in the neurasthenic, recovery and recuperation are not so rapid. The invalids require a longer time to get over the effects of the irritation, and if this be repeated and continuous, a permanent condition of impotence may result.

Constitutional Causes.—This condition is not infrequently associated with locomotor ataxia, diseases of the brain, or sclerosis of the spinal cord. This latter affection perhaps properly belongs to locomotor ataxia, so that we may say that locomotor ataxia and affections of the brain are the most usual underlying causes, which by reflex action may induce debility of the sexual organs, and result in complete and permanent impotence. At first, however, a common symptom of the earlier manifestations in locomotor ataxia is increase of the libido sexualis with augmented powers, and concomitantly, exaggerated sexual desire; the exercise of the sexual functions is also increased, but sooner or later the opposite condition ensues, erections become less frequent and finally disappear. The same result occurs where cerebral disease is a cause, either in the shape of abscesses in or inflammation of the brain, complicated with hemiplegic or paraplegic symptoms.

Abstinence.—The question has often been asked, indeed I have already incidentally alluded to it, whether sexual abstinence can produce impotence, and it has been answered in various ways. V. v. Gyurkovechky is of the opinion that long-continued abstinence from sexual pleasures produces weakening of the sexual power, instancing the

condition of atrophy which ensues in other organs from non-use, and reciting what happened to the officers during the mobilization of the Austrian army, in the portion which was in garrison in Bosnia. These officers, a large proportion of whom were healthy young men, told Vecki that in consequence of a lack of cleanly women they were forced during their garrison service to entirely abstain from sexual intercourse for quite a length of time, an abstinence which as time went on was very easily borne. This did not astonish the younger men among the officers, but what surprised them very much was, that, when they obtained leave of absence, they found upon returning home they were not the prodigies in sexual power which they expected they would be; on the contrary, they found that their powers had diminished, and they had, so to speak, to train their sexual organs back again to their former proper performance of duty.

Hammond gives an interesting instance in which a man reduced himself to impotence by restraining his desires, which is so extraordinary in more ways than one that I shall quote it directly from his work without attempting to give an abstract:

.... "Originally of strong passions, he had, when about attaining his majority, made a vow to follow the example of Mani, and to abstain from all voluntary sexual excitement. He devoted himself to the study of philosophy, with the view of founding a sect, which should be purer in their lives than any that had previously existed. He began by curbing the sexual passions, and proposed, by degrees, to suppress all appetites, except those absolutely necessary to the existence of the individual, and these were to be indulged in to the lowest extent consistent with the preservation of life. As I have said, he was of strong sexual feeling, and for a long time he suffered very acutely,

Libidinous images were constantly before him, and his dreams were only of sexual matters, of all possible variety. During this period, nocturnal emissions were common occurrences. The deprivation was soon calculated to excite disturbance, from the fact that up to the period of his vow he had indulged freely and had kept a mistress from the time that he was seventeen years old. Finally he succeeded in overcoming the sexual appetite, and he was able to pursue his studies with more assiduity than had previously been the case. He made a voyage to India, in order to perfect himself in certain branches of knowledge which he thought he could not study thoroughly at home. During his travels he was repeatedly thrown into company with attractive women, but he had so thoroughly conquered his sexual feelings that they were to him, as he said, no more than logs of wood. He remained absent seven years, but had entirely abandoned all idea of forming a philosophical sect. Indeed, his travels had cured him very effectually of a good many absurd notions which he had contracted; among others, that of perpetual celibacy. As he was a man of wealth, and his fondness for society had returned, he thought he would marry, but was apprehensive that he would not, owing to his lengthened period of continence, be able to perform the part of a husband in the marriage relation. During the whole time that he had been abroad he had had no connection, no nocturnal emissions, no lascivious dreams, and no erections based upon sexual desire. He had no other object in marrying than to obtain a home and its comforts, but would forego the idea if he was incapable of intercourse.

"Upon examination I found that the genital organs were of normal form and condition, and, therefore, that no obstacle, so far as they were concerned, existed. Except for his assurance that he never experienced erections nor de-

sire I should have pronounced him competent, but in the face of his declarations I was satisfied that he was suffering from mental impotence, and that his cure would have to be effected by moral means. I advised him to enter society, and to try to fix his affections upon some virtuous and attractive woman whom he would be satisfied to marry, and to wait patiently for the re-development of his sexual desires. He had no faith, however, in that plan of treatment, but went off, on his own responsibility, into all kinds of attempted sexual excesses. Several months afterward he returned, with the information that he was actually and permanently impotent. No excitations which he had employed had sufficed to induce in him the slightest desire, and his condition, therefore, was a great deal worse than it had been. He had exhausted the means in an irregular way, which, had he followed my advice, would, there was reason to hope, have been gradually efficacious. Moreover, in his attempts at intercourse, he had contracted a chancre, and was already suffering from secondary manifestations. He was placed upon anti-syphilitic treatment, but soon afterward went to the Hot Springs of Arkansas, and, while in the West, married a prostitute, who wanted his money, and who had persuaded him she could cure him. I believe he is still living somewhere, but am quite sure there has been no return of sexual desire.

"In this case there was a loss of power as well as of desire, and hence a double cause for the impotence which existed. The origin, however, was clearly in abolition of desire, the loss of power being a secondary phenomenon."

From a general adoption of this view I must, at present, dissent, for with very few exceptions, I believe that *sexual abstinence never injures a perfectly healthy man*. Undoubtedly there are men of nervous temperament, either inherited or acquired (usually the former), who, having been

accustomed to indulge regularly in sexual intercourse, suffer from nocturnal pollutions, neuralgia of the testes and of the deeper portion of the urethra with constant irritation and more or less discomfort if they are suddenly forced to be abstinent, and in such persons if the abstinence from coitus be rigidly adhered to, the desire for connection materially diminishes and a condition of sexual indifference ensues. This is perfectly normal, because, after the irritation ceases, unless there is something to call it up continually, the sexual desire will gradually cease, excepting perhaps at certain regular intervals. Trainers of pugilists and of men who are entering for athletic contests are well aware of the effect sexual intercourse exerts upon the physical and mental condition of every man, and coitus is the one thing which is rigidly excluded, and about which the strictest laws are held. An ex-pugilist has told me that when he was training for a fight, at the beginning, he suffered a great deal from want of intercourse, his seminal losses were frequent, and he had large and repeated pollutions, but in a short time, as soon as he got thoroughly into his work, these entirely disappeared and indeed he thought no more about them, but as soon as his work was finished and the fight was over he found that sexually he was as good as ever, the libido was pronounced, and, as he expressed it to me, he "could not get enough," and I am satisfied, not only from this man's experience but of others with whom I have talked, that in such cases there is no loss of power from sexual abstinence, provided always the patient is not keeping his genital organs continually irritated by dallying with women, by reading, talking, or thinking about matters connected with sexual intercourse.*

* A somewhat similar experience is related by Haller, as personal to himself. (Krafft-Ebing.)

There is one point to which I wish to call attention; the danger resulting from *long engagements*, especially if the man be of a nervous diathesis, or what is known as a nervous person. Under such circumstances, I care not how pure a man may be, there is more or less sexual excitement and discomfort attended with violent erections, sometimes with a discharge of prostatic or urethral secretion, and this condition, when not relieved in the normal manner, produces more or less hyperæsthesia and an irritable condition of the urethra, which lead to nocturnal and diurnal pollutions or to a condition of sexual neurasthenia, and if this be prolonged the patient may find himself temporarily impotent. This was especially exemplified in the case of a patient who had been under my care for some time several years ago. He himself was a decided neurasthenic, although in physical appearance and build a strong and healthy man. His family history showed that his father was considered to be eccentric, although he showed no evidences of insanity. He was a free liver, and indulged in both wine and women, these latter outside of the marital fold. My patient was a man who had travelled much, was well educated, and an ardent admirer of women, in whose company he indulged himself freely with perfect potency and great enjoyment until he became engaged, and then, feeling that illicit pleasures were no longer for him, he became suddenly continent, or rather, more properly speaking, abstinent. This produced a good deal of trouble in the way of nocturnal emissions and sexual excitement, which was not at all helped by visiting his fiancée, for whenever he was with her he suffered from violent erections, which were exceedingly painful, and later on developed neuralgia of both testicles and of the cords, which was so extreme that he informed me he sometimes could scarcely walk. Ex-

amination of the testicles showed neither of them enlarged—no disease whatever—but the cords on both sides were swollen and tender. I believe this condition was due to compression of the testes and the cords against the abdominal rings, in consequence of the testes being drawn up close to the body during his erections; and he, furthermore, informed me that he found occasional masturbation would relieve this condition of affairs, would soothe his excitement and give him a respite, and while he had a thorough contempt for himself in thus indulging, he said it was an absolute necessity or else he should go mad. This relief would last for a certain time, when the previous train of symptoms would then begin again as before, to be relieved by another indulgence in masturbation, which by the way never was practised to any great extent, but only sufficiently to relieve his sexual discomfort and agony. He adopted this bad habit because he was determined not to resort to public women, fearing that he might become diseased, and he hoped, and indeed was sure, that after marriage all such improper practices would cease. The sequel of the case is rather interesting, the details of which I received from a friend of his, who told me that without any premonition and without any talk of self-destruction the man committed suicide, and his friend informed me that the evening before he had left him apparently perfectly well, and planning a little outing which they had agreed to take the next day.

I have seen many similar cases, particularly among persons who regard illicit intercourse as being improper and wicked. The sinner, in this respect, is very much less likely to suffer than the saint, because the former in the majority of cases relieves himself in some way, whereas the latter does not or, if he does, it is usually by masturbation which, while it would produce no disturbance

when done in moderation, is apt, in inexperienced and improper hands, to be carried to a dangerous degree. Krafft-Ebing in speaking of the psychoses and neuroses induced by sexual abstinence, believes that there is much less danger from sexual intercourse than from the constant struggle which takes place, particularly in the neurasthenic subject, between the desire for intercourse and the effort to restrain himself and remain continent.

I am not aware that the *sexual powers* are peculiarly influenced by any of the *trades*, even in those occupations where the work is conducted under dangerous conditions, such as the employment of phosphorus or mercury, but Gabalda states that sexual impotence has been observed by him to occur among men who worked in benzine and nitro-benzine factories.

Course and Symptoms.—These also may be either local or constitutional, although the two are nearly always more or less intimately associated. The local symptoms are characterized by a *nervous disturbance* of the *sexual organs*, especially of the *deeper* portions of the *urethra* in which *hyperæsthesia*, *paræsthesia*, and *anæsthesia* are present, and sometimes these symptoms will alternate with one another in the same patient. One of the *most common* of these *local affections* is an *irritation* of the *prostatic urethra* which is extremely sensitive to the passage of an instrument, readily bleeding upon the slightest surgical interference and, if examined with the *endoscope*, showing a *congested* and *inflamed* condition of the *mucous membrane*. This irritation of the prostate may also be associated with disease of the *vesiculæ seminales* and of the *neck* of the *bladder*, producing retention of urine, with difficulty in passing water; at other times inability to retain the urine when the desire comes on, associated with frequency of micturition, and occasionally, but rarely, a condition of

incontinence in which the patient passes his urine in bed during sleep, and sometimes even during the waking hours, without any power of control over the bladder. This is more common, however, with children than it is with adults. Besides these symptoms there is often *vesical tenesmus* which attacks the patient at any period during the act of micturition, but generally toward the end, being characterized by painful spasms and by the passage of a few drops of blood, and after the act it is followed by *excruciating pain* which radiates from the neck of the bladder, over the perineum, about the anus, and down the thighs, together with *neuralgia of the testes*. These glands are sometimes quite painful and are frequently drawn tightly up against the abdominal rings, a condition which may last for several hours after the act of micturition which the patient defers as long as possible, knowing that it will end in this painful condition. Associated with these symptoms is a more or less *marked debility* of the *sexual organs* characterized by *imperfect erections*, sometimes *none* at all, and if perchance the patient has an erection sufficiently good to allow of an attempt at intercourse, ejaculation takes place immediately upon entrance, even before, a condition known under the name of *ejaculatio precox* and *ejaculatio ante introitum*.

Constitutional disturbance is shown by the symptoms known as *spinal irritation*, which is characterized by *pain* in the *back*, usually localized about the last dorsal or first and second lumbar vertebræ; a continuous tired feeling in the back, the patients sometimes describing the sensation as though the back would break; a feeling of *heaviness* in the *legs*, as if it were impossible to walk, and yet not attended with any loss of physical power, for such patients will oftentimes tramp four, five, six, and even more miles a day, without the slightest difficulty; a *feeling of weight*

extending from the lumbar portion of the spinal column to the perineum and genital organs; not infrequently associated with these symptoms are *pains* in the *head*, usually at the vertex, occasionally extending from there to the back of the head and nape of the neck and sometimes radiating to the frontal region, accompanied with a feeling of *mental dulness*; inability in the patients to collect their thoughts or concentrate them upon any work; and a sensation of *abdominal repletion*, oftentimes conjoined with a *nervous derangement* of the *stomach* and *sluggishness* of the *bowels*, alternating between constipation and diarrhœa. The *urine* is sometimes abundant, clear, and watery (*urina spastica*); at other times it is loaded with a heavy deposit of phosphates and oxalates (*phosphaturia*, *oxaluria*), conditions which have already been described in preceding sections and which I shall not take up more fully here. Conjoined with these symptoms are *disturbances* of the *respiratory* and *olfactory* functions, characterized by sneezing, nasal catarrh with abundant secretion, asthmatic wheezing in respiration, ptyalism, and occasional nasal hemorrhages, associated with spermatorrhœa. Sometimes the olfactory sense seems to be blunted, and there are hallucinations of smell, accompanied by an abnormal dryness of the mucous membrane of the nose, with a marked diminution of the natural secretion of the part. In these patients, although the *sexual powers* may be very materially *interfered* with, perhaps almost *abolished*, the *desire* is oftentimes exceedingly *strong* and may develop into a condition where they are unable to restrain themselves, for their minds, running entirely upon their sexual organs and functions, impel them to the performance of acts which are entirely incompatible with the idea of a normal mental state, producing what is known as *satyriasis*.

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CHAPTER XI.

SEXUAL IMPOTENCE.

(*Reflex or Collective.*)

(*Treatment.*)

UNDER this heading I have included that class of cases in which sexual impotence follows as a secondary result from some precedent constitutional or accidental cause. In the former are included the *zymotic* and other forms of disease; in the latter, those affections which are produced by *drugs* or similar agents. I shall first then consider that variety of sexual impotence which results in consequence of some constitutional affection, and afterwards take up those instances of sexual debility in which it is caused by the action of some drug or vegetable.

The *wasting diseases*, such as tuberculosis, marasmus, and nephritis, are supposed to produce more or less functional atony of the sexual organs, as was stated by Louis in the early part of the century, but this, if true, is only so in a very limited sense. Certainly in the early stages of these diseases there is not only no diminution in the sexual vigor, but there is oftentimes an increase both in the libido and in the sexual power, so much so that the term *phthisicus salax* is recognized as one of the symptoms of early tuberculosis of the lungs (Hanč), and even later in the disease the sexual vigor and power do not seem to be interfered with, for Hofman narrates the history of a tuberculous patient who indulged in copulation with his wife the night before his death, and another instance is

given by Dr. Suchser where a patient of Dr. Hencke, with croupous pneumonia of one lung, indulged in similar refreshment, started up a new pneumonitis and succumbed as a consequence of his unbridled passion (Hofman). We may, therefore, consider that *phthisis and pneumonia* play very little, if any, part in producing impotence. In *diphtheria*, of course, during the acute stage, there would be very little, if any, opportunity for the patient to indulge in coitus, nor would he be in condition to do so, but as soon as the attack has passed off, the sufferer seems to be no worse than before, so far as his copulative powers are concerned.

Diabetes, on the other hand, affords an instance where there seems to be some interference with sexual vigor, and probably the cause why the genital power becomes impaired in this disease is due to the fact that it is primarily an affection of the nervous system. Indeed one of the earlier symptoms in diabetes, coexistent with the polyuria and even antedating it, is the fact that *sexual vigor* is considerably *diminished* and, as the disease progresses, becomes almost extinct.

Gout probably plays an unimportant part in sexual debility, although, of course, during the acute stage of the disease, there may be diminished desire, but it is purely from accidental and mechanical causes, and not directly in consequence of the disease.

In *nephritis*, particularly in the later stages where the inflammation of the kidney is marked by degenerative changes, the sexual powers are decidedly diminished, but in the earlier stages I am not inclined to ascribe much loss of sexual vigor as a consequence of disease of the kidneys.

Typhoid, typhus, yellow fever, and similar zymotic diseases have been said to be preceded by a lack of sexual vigor prior to the attack, but I am extremely doubtful as

to the correctness, not only of this statement, but of the assertion that in convalescents from these diseases, the sexual appetite is much increased (Beck), notwithstanding that some cases have been reported where this condition of affairs has been said to exist.

Acute cerebritis and *inflammation of the meningeal coverings* of the brain are often attended with an increase of sexual appetite, and in cases of *chronic cerebritis* which are associated with a lack of mental vigor, as for example, among idiots and the mentally weak, the salacity is marked, so much so, indeed, that these patients will attempt the chastity of any woman they meet. They are furious masturbators, performing the act in public without any attempt at concealment, and, failing in everything else, will with unblushing effrontery commit sodomy upon any animal they can get hold of. This condition of salacity may also result from an apoplectic effusion into the brain, and in his lectures the late Dr. Humphreys Storer, of the Medical Department of Harvard University, used to relate an instance in his own experience, of a man who, notwithstanding a very small penis, was remarkable for sexual vigor. Upon his death he was found to have a small tumor of the cerebellum, to the existence of which was ascribed his abnormal copulative powers. Dickinson gives the history of thirteen cases of softening of the cerebellum, in two of which genital excitement took place early in the disease, but later on the virile powers were impaired.

Locomotor ataxia, of all forms of myelitis, is characterized in the earlier stages by extreme venereal activity. In some instances the patients seem to be occupied in but little else than copulation. As the disease progresses, however, this, of course, passes away, and the contrary takes place, for while they have all of the desire, they have

none of the power, and this condition is marked by other symptoms, such as pains in the limbs, a straggling gait, absent knee reflexes, and the usual manifestations associated with this form of disease (Marie).

Injury of the brain and spinal cord produces similar results, and cases of permanent priapism together with, in some instances, increased libido and in others diminished sexual powers, are not at all infrequent in medical literature. Fisher's case of a railroad accident in which the patient's spine was injured and where impotence resulted, is one of the best-known cases on record, and Larrey, in his *Mémoires de Chir. Milit.*, 1812, speaks of a sabre wound which injured the cerebrum, and produced permanent impotence with atrophy of the sexual organs.

Montmollin published the history of a patient who fell six feet from the roof upon which he was at work. This was shortly followed by pains in his joints and in his head. Sixteen months later the patient was attacked with diabetes insipidus. Four years later he suffered from impotence resulting from atrophy of the testes. Throughout the entire five years the headache was a constant symptom.

In *hemiplegia* the sexual power does not seem to be materially impaired. Krügelstein cites an instance in which the wife complained of too frequent indulgence in coitus on the part of her hemiplegic husband, and Rosse also narrates a similar case. In *paraplegia*, however, the opposite seems to obtain. There the injury to the spinal cord seems to produce impotence, due not so much to a loss of desire as of the power of erection.

Neuralgia of the testes and of the spermatic cord; of the *urethra* and of the *neck of the bladder* are also causes of impotence, usually, however, temporary, and due to the great pain produced by any attempt to perform copulation; b

it must be remembered that oftentimes neuralgia of the testes occurs in subjects who had previously been in the habit of indulging in sexual refreshment, and who have, for some reason or other, such as a change of heart, or the loss of a wife or mistress, become suddenly abstinent. In these cases genital irritation seems to be produced, which is relieved either by sexual intercourse or, failing in that, by masturbation, and I have seen several instances where this condition has obtained. Another curious form of neuralgia of the urethra produces impotence by implication, much as neuralgia of the testes does, because, although the patient is perfectly potent sexually and able to perform the act, at the moment of emission he is seized with such a frightful spasm as to be unable to make any further movement, and he has to keep perfectly quiet, leaving his penis *in situ* until the erection subsides, when an emission takes place, and after a while the parts are restored to their former condition; in other words, it seems to be a condition of *temporary aspermatism* due to a nervous contraction, either of the ejaculatory or compressor urethræ muscles, whereby the emission is stopped, and in consequence of the pain the man becomes impotent for the reason that whenever he thinks of sexual refreshment his former experiences deter him [cf. p. 266].

Parotitis has long been recognized as a cause of inflammation and swelling of the testicles, followed not infrequently by sterility in consequence of inflammation of the epididymes and blocking of the vasa deferentia, but whether impotence resulted has been an open question. Bich, however, who seems to have had unusual opportunities for observation among soldiers in the French army, states that a large number of men who are thus affected suffer from abolishment of sexual desires, together with impotence, and that the maximum of frequency at which the

disease occurs is between the ages of eighteen and twenty-five.

Disturbances of the digestive organs will also produce temporary impotence, and although it has been denied by some authorities (Peyer) that oxaluria or phosphaturia is a cause rather than a result of the sexual disturbance, I think the cases of Dickerman, Bransford Lewis, Curling, and others, where, upon treating the digestive disturbances and curing the condition of oxaluria or phosphaturia, as the case might be, the patients recovered from their sexual debility, suffice to demonstrate that gastric and intestinal derangements are sometimes causes of sexual debility.

Leukæmia is another of the diseases which has been considered as a cause of sexual impotence, but while not denying that in an advanced condition of leukæmia the extreme debility characteristic of this malady may preclude sexual exercise or enjoyment, at the same time, unless the disease is advanced, it can hardly be reckoned as a very potent cause. Indeed, I doubt if it should properly be considered as a factor.

Myxædema is assigned by Kuh as a cause of this malady. He gives the history of two patients in whom impotence with loss of desire, resulted in consequence of this disease. The result of treatment seems to have been eminently satisfactory, because both patients recovered their sexual powers upon restoration to health. It is worthy of note that these two patients were respectively fifty-one and fifty-two years of age, and Kuh specifically states that in neither of these cases had the age anything to do with the access of the trouble.

Riding is another possible cause of sexual impotence—whether it be upon a *horse* or a *bicycle*—and while neither of these exercises, if done in moderation, can, in my opinion,

be ascribed as a frequent cause of sexual debility, yet, if intemperately and persistently indulged in, I think it is a decided etiological factor in the causation of impotence. I have seen many cases occurring in officers of the United States Cavalry, and among civilian riders, less in the latter than in the former, where the riding is not so prolonged nor so severe, nor is the saddle of a construction that would be likely to produce disturbance; I have seen, I say, quite a number of cases of sexual debility, which I am satisfied were kept up, if not originally produced, by this exercise, and this form of debility was associated with a condition of chronic irritation of the prostatic urethra with, or without, enlargement of the prostate. Hammond's famous instance of the *mujerados* among the Pueblo Indians may be cited as an example of the bad effect of continuous riding, but it must be confessed, however, that the result was very much hastened, if not perhaps in part produced, by the furious masturbation which was considered as an essential part of the ceremony, whereby, as Hammond states, the unfortunate wretch was reduced to a condition of absolute impotence, his testes became atrophied and practically disappeared. He was to all intents and purposes unsexed, associating with the women of the tribe, being avoided by the men, although by no means despised, and was reserved for the purposes of pederasty, which seems to have been indulged in, not so much as a sexual pastime, as a quasi-religious rite. The curious can read what Hammond has to say on the subject in *Neurological Contributions*, and also in his work on *Sexual Impotence*.

Syphilis.—A few cases have been recorded where syphilis is believed to produce impotence, but I have never seen any such, and I am exceedingly doubtful if the impotence in these recorded histories was really due to the syphilis. Instances are reported where sterility seems to

have resulted from syphilitic inflammation of the testes, and this I think is sometimes likely, but I shall consider this point more fully in the chapter on sterility.

Drugs.—As regards the action of drugs, the most important of these are alcohol, morphine, cocaine, and arsenic. For the purposes of discussion, I shall consider *alcohol as a drug*, although it is an article of daily consumption; by some considered a curse, by some a luxury, but by the majority of mankind as a necessary of life. I think in this country alcohol plays a far larger part in the production of sexual debility and disorders of the sexual organs than it has been credited with, much more than the habit of masturbation, which, in the United States, taking the average of patients as they run, I believe, plays a small part as causative of sexual impotence, nothing like so much as the trick of so-called withdrawal, either with or without retardation of the seminal discharge. Alcohol, I believe, plays a curious part in this class of sexual troubles. In small doses it at first stimulates the desire without affecting the sexual power, indeed it rather increases it, and half the follies which are committed with women are due to the stimulating effects of wine at a dinner or of a pull at a bottle, which is taken by some men in order to revive their drooping courage. The Roman proverb, "*sine Cere et Baccho friget Venus*," is true within certain limits, but beyond them neither Bacchus nor Ceres can save Venus from being chilled, for the chronic alcoholic is deprived, not only of the power of erection, but he loses even the desire for connection, or if it be present, 'tis but a feeble flame compared to what it ought to be. That *alcohol* has a decided influence in the causation of *sterility*, and the formation of spermatozoa, I think has been shown in many instances, of which I shall give more extended notice in a subsequent chapter; but

so far as the question of impotence is concerned, I am perfectly satisfied that a chronic alcoholic is eight times in ten, sexually speaking, a eunuch.

Beer drinking seems to have still more disastrous effects upon the sexual powers. Both Vecki and Curschmann lay stress upon this action of beer, notwithstanding the fact that the percentage of alcohol in beer is much less than in most wines, and certainly less than in spirits. The latter writer considers that this absence of sexual desire and ability for coitus depends upon the presence of the lupulin in the hops of beer, but I should strongly incline to differ from this view, taking the same ground that Vecki does, to wit, that the amount of lupulin in the beer is too small to produce the effect; moreover, in using lupulin as a drug I have entirely failed to obtain any sedative action upon the generative organs. Vecki thinks that it is due to the large quantity of fluid beer-drinkers are prone to absorb, which, by continually stimulating the urinary organs, produces a corresponding debility of the sexual powers, with incapacity for erection. I think such an explanation is quite probable, although I recall one instance which was told to me during my student days by a fellow-student, that beer had a stimulating effect upon his genitals, for after drinking two or three glasses he invariably had a strong desire for coitus. It should be remarked, however, that this was only after the use of a few glasses. The young man himself was not a confirmed beer-drinker, and it is quite possible that the result in this case may have been due to a similar condition of affairs which we not infrequently find, where a moderately full bladder will be attended with more or less complete erection of the penis. Be the explanation as it may, the fact remains that steady beer-drinkers are not good bed-fellows.

Opium and its alkaloids, especially *morphia*, produce much the same effect; in small doses, in the East, it is considered as an aphrodisiac, but in larger doses it produces the opposite result, and the victim of this habit becomes a sexual nonentity, for the chronic opium eater or smoker becomes, like the chronic alcoholic, entirely regardless of everything except his favorite drug. Wine, woman, and song no longer have charms for him, and he lapses into the condition which Goethe stigmatizes as that of a fool. Hirt has recently called attention to the action of morphia upon the genitals when given in small or large doses. In the smaller dose, and when used only occasionally, he noticed it had a stimulating effect upon the organs of generation, but in larger doses it had the effect of extinguishing the desire and crippling the erection, and if the drug be persistently used, the patient becomes not only impotent, but he also suffers from spermatorrhœa, a point to which I have already called attention in another part of this book.

Cocaine produces somewhat similar effects.

Arsenic is also said to have the effect of inducing impotence, but in my own experience, where in cases of skin diseases it has been necessary for me to use arsenic, even in pretty large doses, I have not been able to discover that it had any appreciable effect upon the organs of generation, and among the peasants of Styria, where arsenic is said to be used largely for cosmetic purposes, I understand no bad results ensue from its use, certainly so far as the sexual powers are concerned.

Tobacco I believe plays but very little, if any, part in the production of sexual impotence. It has long and popularly been considered as an anaphrodisiac. If it be so, I think its anaphrodisiac qualities are very slight. I myself do not regard the average use of tobacco as of

course, it is carried to the extreme of producing a condition of nervous irritability, as producing any alteration in the sexual powers or desires. Peyer gives the instance of a forty-five-year-old peasant living in the Baden Black Forest, whose case I have already cited on account of his stalwart powers in the copulative line, and who is again brought forward as evidence, because not only did his steady indulgence in coitus produce no bad results, but because Peyer furthermore notes that he lived upon a scanty diet, worked furiously, and *smoked tobacco the entire day*. Curling and Hanč, however, consider that tobacco, like alcohol, has a bad effect, but I repeat what I have just stated, that my experience varies absolutely from theirs, and unless the patient smokes the strongest tobacco, such as Périque, and then so immoderately as to produce nervous debility, *tobacco has no specially sedative effect* upon the powers of copulation or generation.

TREATMENT.

Treatment will, of course, vary according to the conditions which produce the impotence, and first we will consider the *physical causes*. If the penis is entirely absent it is hardly necessary to say that nothing can be done, for I am not acquainted with any operation in surgery which can replace the missing member, or even supply a decently good or serviceable substitute. The same is true if the penis is of monstrous proportions, although it must be borne in mind that there are very few, if indeed any, positive instances known where the bearer of a large *membrum virile* is incapable of the sexual act in consequence of the size of his organ. If the penis be small the difficulty may be obviated as is shown in the cases of Roubaud and Wilson, in the former by mechanical means, and

in the latter by use and practice, and this probably would be the result in a large proportion of those cases where the male organ of generation is smaller than usual. Rarely, however, is the penis so small as to be incapable of service. Where it is lost by ulceration it is as difficult to replace this organ as though the penis had been entirely absent from birth. Where the *penis is adherent* to the scrotum, it can be liberated by an operation which consists of dissecting it from its scrotal attachment, care being taken that sufficient skin is removed from the scrotum to make two flaps to cover the denuded under portion of the penis. When the *penis is bifid* it is doubtful if any operation can be done that would be productive of service, and it will be better to leave the organ as it is than, by meddling, to make the existing condition of affairs worse. In the *double organ*, naturally, there is nothing to be done, for in these cases the man sexually is serviceable in either one or the other organ, sometimes in both (Dos Santos' case). Where the *corpus spongiosum* is so *short* as to be incapable of performing the sexual act, it can usually be remedied in the manner suggested by Gross.

Neoplasms present more or less difficulty, according to the nature of the growth. Where they are due to cartilaginous or cretaceous deposits in the corpora cavernosa, these may sometimes be dissected away with the result that a serviceable organ is left behind, as was the case in McClellan's patient, and where it is due to inflammatory action, to gonorrhœa, or to the presence of syphilitic exudations it is possible that a local application of iodine and the internal administration of iodide of potassium, mercury or some other resolvent, may have the effect of relieving the deformity and restoring the organ to its normal condition.

Varix of the vena dorsalis penis may be remedied in the manner suggested by Parona and Bartholow, by the injection subcutaneously of a solution of chloral hydrate, or by ligation of the vein, as in the cases of Raymond and King.

Redundancy or adhesion of the prepuce to the glans penis may be relieved by the simple operation of circumcision and dissecting off the adherent tissue from the glans penis, and *absence* of this portion of the male genital organ has been remedied by an attempt to make a new foreskin from the loose skin of the penis, which is however, I think, of doubtful utility.

Shortness of the frænum may be easily remedied; if slight, by simply snipping through the obstruction, or, if necessitating a plastic operation, by dividing the constricting part, and making two small flaps from the loose adjacent skin of the penis.

Epispadias, if incomplete, may be relieved by a plastic operation which sometimes restores the penis to more or less usefulness, but where it is complete, there is generally very little prospect of success by operative procedures. The same is true of *hypospadias*; the nearer the deformity is to the glans penis the better the chances of restoring the organ to its normal condition. But when the opening is in the perineum, and especially when it is associated with a deformity of the scrotum in the shape of a fissured bag, there is very little prospect of good resulting from the operation.

Varicocele as a cause of impotence is usually relieved in two ways, either by ligation of the veins or by ablation of a portion of the scrotum.

Elephantiasis of the scrotum may be remedied by the removal of the redundant growth, but if the tumor be large, the testes oftentimes have to be sacrificed, and the

The treatment for the *psychical* forms of impotence is more *moral* than *physical*. Where there is an inherent *repugnance to women*, very little encouragement can be held out by any form of treatment. The matter usually rests in the hands of the patient himself, and where this is the case, he is oftentimes content to remain as he is, but it sometimes happens that the invalid changes his mind, takes sufficient interest in the opposite sex to become married, and assumes his place in society as a respectable married man.

Where there is *preference for the male sex* it is exceedingly difficult to produce any decided or permanent cure, although even here it occasionally happens that the man's morbid and perverted fancies are diverted by moral suasion into the normal channel. The lack of sexual instinct (*frigidity*) is practically incurable by medical means, because some men are constituted by nature with a repugnance to sexual intercourse, and there are no means at the physician's command which will supply the missing instinct.

Fright as a cause of impotence is usually self-curable. The patient gradually recovers his normal tone, and with a return to a healthy condition, the sexual instincts again assert themselves.

Where impotence results from *peculiar causes* such as those mentioned by Roubaud and others, where the woman must be of a particular type; must be clothed in a peculiar manner, or where the surroundings must be those with which the man is familiar, as in the case mentioned on page 270, it sometimes happens that argument, ridicule, or an appeal to the patient's good sense may effect a cure; but at best it is difficult to remedy, the patient remaining practically impotent unless the attendant circumstances are just so, and the same reasons hold true with regard to the *dislike for particular women, marital indifference*

and to *superstition*. Where sexual intercourse is interfered with by *over-anxiety, over-joy, etc.*, the only remedy left in the hands of the surgeon is to ease the patient's mind; to appeal to his good sense; to show him the why and wherefore of his temporary impotence, and by gaining his confidence to assure him that in time everything will come out right; in other words, to give the patient the courage which he lacks.

Where *intellectual studies* interfere with the exercise of the sexual functions, a suspension of these studies and an entire change in the mode of life, substituting physical exercise and out-door sports for the sedentary work which has been the cause of the patient's impotence, are the best means at the physician's disposal, but I should be loth to offer advice similar to that given to the wife of the mathematician whose case is mentioned on page 273, to wit, by a condition of repeated semi-intoxication to divert the mind from serious topics to the more frivolous matters conducive to copulation.

Where debility occurs from the existence of some *phantom* occupying the mind, such as a shoe, a nightcap, an apron, a handkerchief or the like, it happens that proximity to these articles of apparel will sometimes assist in the recovery of the patient, together with the administration of tonics, nervous sedatives, and an appeal to the man's powers of will and resistance; and a form of treatment which has lately come into vogue, advocated by Schrenck-Notzing, Krafft-Ebing, Desaulle and others, namely, the suggestive treatment, is worthy of a trial. In some instances it seems to have succeeded in the hands of these gentlemen, in others it has failed. I have not had sufficient experience with this variety of treatment to say anything about it from personal knowledge, and am therefore obliged to rely upon the experience of others, which

seems to show that although not constantly successful, there is a possibility of good being effected.

In the case of *perverts*, I am inclined to regard the sexual trouble as due to moral obliquity, which I believe in the majority of cases is incurable, and the methods of treatment employed must be those directed toward an improvement of the moral tone, which in this class of cases I admit is very problematical. Like Ephraim of old, they are wedded to their idols, and no amount of persuasion, of argument, or of ridicule seems to be of service, and to appeal to their moral sense is as useless as it would be to invoke the gentle quality of mercy in a wild beast. They frankly acknowledge their defects, and while not glorying in them, they decline to admit that they are especially wrong, claiming that it is rather a matter of taste than anything else, and on the principle, "*De gustibus, etc.*," any attempt to improve this class of subjects is, in the majority of cases, time absolutely thrown away.

Where *satyriasis* is due to a physical cause, as, for example, an adherent prepuce, varicocele, or the like, a surgical operation will usually remedy the trouble, but where it is due to some cerebral disease there is little hope of recovery, although at the present day the advances made in brain surgery offer some hope that the disease can be sufficiently located in the brain to make the result of an operation a matter of fair certainty.

Neurasthenia.—Where the impotence is due to neurasthenia, the treatment may be divided into two parts, the one being *local* and the other *constitutional*. Where the debility results from *chronic gonorrhœa*, from *inflammation of the prostate* or of the *neck of the bladder*, from *disease of the vesiculæ seminales* or from *neuralgia of the testes*, local treatment affords a fair measure of success. In cases where the prostatic portion of the urethra is the

sexual trouble, local applications made through the endo-cervix or the injection of astringents made through an Latham's syringe will be of service. Where the prostate is the cause of the trouble, massage of this organ, the use of suppositories of opium, tannin or belladonna, either alone or in combination with sitz-baths and the application of iodine or heat, according to the requirements of the case, through the rectum, will oftentimes effect a cure. Where the vesicle seminales are the seat of chronic inflammation, irrigating these organs will sometimes be of benefit, and where the neck of the bladder is inflamed, similar applications to this portion of the genital tract will relieve the trouble. Where neuralgia of the testis is the cause, compression of the spermatic cord and the internal use of acetate or opium will sometimes be of benefit; or, as a last resort, if the pain is too severe, castration may be resorted to, but this should be absolutely the last resort, for it must be remembered that in many instances the operation does not relieve the neuralgia for it may happen that the other testis is similarly affected and I am not one to advocate the abolition of such an important portion of the body, except as an absolute necessity and only then if no other possible means of relief is at hand.

If the disease has been produced by *masturbation*, by *sexual excess*, by *coitus interruptus* or by *coitus reservatus*, the first step toward recovery lies in the abandonment of these bad habits for until these causes are removed, no medical treatment, however good or scientific, can ever produce satisfactory results.

Regarding *neurasthenia* as the source of sexual impotence, I have already stated that I do not believe it acts as a frequent cause, but in the few instances in which the patient, from his nervous temperament, requires sexual pleasures,

it may perhaps be well that he be allowed to indulge, although I strongly advise the surgeon not to counsel it, for the risks in so doing are more than any prudent medical man should be willing to assume; but the patient may be told that sexual intercourse seems to be necessary for him, and that he, the patient, must take the responsibility in so doing, such information being given on the supposition that the patient is unmarried.

Where the disease is due to *constitutional causes*, viz., stomachic or digestive troubles; to nervous irritability either of the brain or of the spinal cord; to nervous exhaustion from overwork, or to sexual excesses, attention to the general health, proper regulation of the diet and of the bowels, the use of cold or hot water baths or, if admissible, of sea bathing, journeys by sea or land, diverting the patient's mind as far as possible from his sexual condition, and the use of anodynes such as the bromide of potassium, or opium, hold out the best means of relief. There is no royal road that I know of to the cure of sexual debility, and to be effective, the treatment must be persistent and continuous, for inasmuch as the causes which produced the trouble are usually of long standing, it can hardly be expected that sudden or immediate relief will be obtained by any method of treatment. Two things, however, are certain, the use of *alcohol* and all attempts at *sexual connection* should be *absolutely interdicted* until the patient has entirely recovered, for stimulants do no good, rather injuring than assisting the weakened organs, and sexual intercourse produces the same result, in addition to impairing the patient's confidence in himself upon the failure of each attempt at coitus. There is one form of treatment which, some years ago, had quite a vogue. I refer to the method known as Brown-Séquard's treatment, by the use of the *animal extracts*. Unfortu-

mutely and unjustly Brown-Séquard was made to advocate this form of medication as a specific for sexual impotence, whereas the relief of this special condition of debility by the testicular juice was not advocated by Brown-Séquard. It was advised originally for the relief of senile debility, not necessarily connected with sexual weakness. Brown-Séquard claimed that it was an excellent tonic in the feebleness of old age, and he afterward extended its use for the relief of locomotor ataxia, phthisis, and various other diseases, his earlier experiments being made with a preparation which was derived by maceration and distillation from the testes of animals, principally of the guinea-pig. He and others of his school, d'Arsonval, Éloy and others claimed to have had great results from this method of treatment, but it was nearly always in cases of debility of old men and in nervous affections, and no stress was laid by these gentlemen upon its being particularly applicable to cases of sexual debility. I have tried some of the animal extracts in the treatment of cases of sexual debility and impotence, principally those known as testin and lumbarin; the former I obtained from the Columbia Chemical Company of Washington, through my druggist, the extract purporting to be derived from the testes of the ram and the bull; the latter I obtained through the kindness of Dr. Engel of Philadelphia. He had the lumbarin prepared under his supervision from the spinal cord of the ox, and I obtained the extract from his chemist. The former I used first as an injection, injecting from three to five minims in various portions of the patient's body, but it produced more or less pain and inflammation at the injected point, in one instance an abscess, and it was so disagreeable that patients rebelled against its use, and after trying it in a few cases, I gave up its hypodermic use. The latter I administered internally

in doses of from five to ten minims, which was the amount advised in the earlier preparations—later preparations I believe were so made up as to allow of teaspoonful doses; but after using it for some little while I abandoned it, for the results in my hands, so far as the question of relieving sexual impotence was concerned, were purely negative. I never could see that my patients derived any benefit from the use of either the testin or lumbarin. The latter is a good tonic in some instances; it improves the general health, increases the appetite, and seems to benefit the patient in a general way, but as regards the sexual powers, I am constrained to state that the results were negative, and I have therefore abandoned the use of this kind of medication as being practically of no value.

Reflex and Constitutional.—Where the impotence is believed to be due to *phthisis*, whatever relief is hoped for must be obtained through remedying the constitutional disease, supposing that to be the cause, but as I have already shown, many patients affected with *phthisis* are by no means sexually impotent. I have already called attention to one instance where the patient the night before his death copulated with his wife, and then, whether from exhaustion or from the natural course of the disease, gave up the ghost. In the case of pneumonia mentioned by Hoffman, the patient apparently was injured by his sexual indulgence, for he also shortly went the way of all flesh, and Hencke rather thought it was owing to his foolish behavior.

If the sexual disturbance result from *nephritis*, *cerebritis* or *myelitis*, treatment must be directed for the relief of the constitutional disturbance, with or without the addition of local treatment; but to expect improvement or cure of the impotence by local methods alone would be hopeless.

Diabetes, being an affection of the nervous system, must be cured before the resulting impotence is improved, but inasmuch as many of these cases of diabetes respond poorly to treatment, the resulting sexual impotence is very seldom, if ever, remedied.

I have already expressed doubt with regard to the influence *typhoid* and other zymotic diseases play in the production of sexual impotence, as it nearly always results that after recovery the patient's sexual powers are as good as they were before. Indeed, in some instances they are said to be increased, but time and use correct this vigor, and the patient is practically, so far as his sexual organs are concerned, no worse and no better than he was before.

In cases where *syphilis* is supposed to play a part in sexual impotence, in this as in other constitutional diseases, the cause must be treated. Where the testes are not affected I am extremely doubtful if any real sexual debility is manifested, but where the testes are affected, it is possible they may react upon the sexual functions in such a way as to produce impotence, but this I believe to be purely temporary and proper treatment directed to the cure of the syphilis will usually relieve it. Cases of syphilis of the testes result rather in sterility than in impotence, and I shall pay more attention to this class of disease in connection with the sexual functions in the chapter which succeeds this one.

Where *alcohol*, *tobacco*, or *morphia* plays a part in the production of sexual debility, the use of these intoxicants must be abandoned before any permanent relief can be afforded the resulting impotence; but as regards other drugs, I believe they play any part in the production of sexual debility. So believing, I have nothing to say of treatment in such

Bicycle or horseback riding, if the cause of the trouble, must be abandoned, until the sexual disturbance passes off, and when resumed they should be taken up carefully and not indulged in to any great extent.

Iodine has been mentioned in this connection as producing atrophy of the testes and loss of sexual power. I have used this drug and its derivative, the iodide of potassium, in large quantities, and I have yet to see any patients in whom either of these two results has followed from their use, and while I should hesitate to say that anything was impossible in medicine, I am justified in doubting, if in my experience any given statement is not borne out by facts. *Nitrate of potassium* as an anaphrodisiac finds its modern advocate in Hammond, who bases his authority on the statements of de Caux and Saint Ange, and he himself has used it in two patients with the effect of extinguishing, for the time being, all sexual desires. Perhaps—and perhaps not. At the present day, however, I doubt if it is held in much esteem as an anaphrodisiac. *Salicylic acid* is said in large doses to produce a decided abatement of sexual desire and sexual power, but this again is one of those drugs in which A says he has found such and such to take place, and B and C deny it. I myself think that the weight of evidence is rather against than in favor of this action of the drug.

Bromide of potassium has also been considered, in large doses, as tending to cripple the sexual powers, and it has been stated that where "some one of the bromide salts is given . . . for several years without interruption . . . it is almost invariably the case that after a few months the desire and power begin to become less. Occasionally the effects are permanent, but usually when the administration of the drug has ceased the normal state returns, especially if proper remedies be given" (Hammond). The

much has been expected, and Vecki in the first edition of his work spoke rather favorably of this treatment, but in the second edition he says that a closer investigation and acquaintance with this mode of cure has proved it to be a true *Fata Morgana*.

Electricity was at one time vaunted as the cure-all in these cases of impotence, but like so many other remedies in the treatment of sexual disorders, it has found its proper level, and while not discarded, as many other medications have been, it is not considered the panacea that it once was. The current which is of most benefit is the galvanic, although Morton of New York speaks of static electricity as the best method. Whether his enthusiasm is warranted or not time will show, but upon general principles we may expect that this probably will be modified. Upon one point I am satisfied, so far as my own experience goes, that the faradic current is not beneficial in cases of sexual impotence; indeed, in some instances I have found it to do harm.

Baths in the shape of hot or cold water are not infrequently of benefit, and I have found of the two the hot bath and the hot douche, or spray, have a better effect than the cold. The various methods of applying water in these cases are fully set forth in the various works on balneotherapy, so that it is unnecessary to dwell upon them here at any great length.

Mechanical Means.—From time to time various contrivances which are designed to cure cases of impotence by mechanical means have been brought forward for medical support and approval. One of the most celebrated of these was the instrument known under the name of the *Ventouse of Mondat*, the operation of which was, by suction, to force the blood into the vessels of the penis and so produce an artificial erection. Time and use have not

realized the expectations of its inventor, and, after a while, nothing more was heard of this "congestor," as it was called, but in recent times an instrument has been invented by a civil engineer of Cologne, one Paul Gassen by name.

This instrument consists of four parts which are named respectively erector, compressor, cumulator, and ultimo, and appears to be designed to meet the requirements, not only of simple cases of sexual impotence, but also of those which are more obstinate and incurable. The erector is the simplest, the ultimo is the most complicated.

With the sole exception of Krafft-Ebing who considers it the best of the mechanical instruments in use, the German physicians seem to be opposed to it and to regard it as of little service. I cannot speak from personal experience about this instrument, as it has not been placed on the market in America, so far as I know, but another instrument called "Potentor" has been mentioned in a medical journal of this city as designed to relieve cases of sexual impotence (Scheinkman) in the same manner that Gassen's apparatus would seem to do. It may be likened to a species in which the non-erectible penis is put, and by this species of mechanical aid vaginal entrance is effected. As I have already said, Krafft-Ebing is the only man of prominence who has said a good word for such instruments, while Lowenfeld and Furbinger decry their use, and in my opinion, all such adjuncts as these may be looked upon rather as assisting debauchery than as aiding the injured and, therefore, liable to abuse (Wells). It certainly seems difficult to imagine how any pleasure can be derived in copulation by resorting to such means as these, and it would appear as though it were better to forgo coitus than to resort to such methods. It would seem almost as reasonable to expect a cripple on

crutches to take pleasure in a foot-race as for the sexually incapable to enjoy coitus when his virile member is encased between splints.

Suspension is another one of the means employed in recent times for the treatment of sexual impotence. The suspension is practically the same as was suggested and has been used by the late Dr. Sayre of New York and other surgeons for the relief of Pott's disease of the spine, and this apparatus has been modified by Althaus, Morton, and by Motschutkovsky. The latter used it primarily for the relief of disease of the spinal cord, but it was found, however, that, in many cases of sexual impotence due to neurasthenia and to irritation of the spinal cord, it also had a good effect (Revilliod; de la Tourette).

Blocq gives in detail the history of the case which is quite interesting. It relates to a patient, aged twenty-seven, who was impotent *ex abusu sexuelle* and who also suffered from *spermatorrhœa defecationis*. He seldom had nocturnal pollutions and never any diurnal ones. His general condition was good and there was no neurasthenia, although he was depressed on account of his condition. He occasionally had erotic dreams without erection. The tendon reflex on both sides was exaggerated. Sleep was good. The erections, it should be noted, were entirely absent. Treatment by Sayre's method of suspension was carried out for three months with marked success. The erections returned and coitus could be normally indulged in. Blocq saw him four months afterward, and stated that the patient had suspended all treatment for four months, and within that time had at least fifty coitus.

That certainly looks very well, but three months later and seven months after the abandonment of all treatment Blocq makes the following rather significant note: "The

STERILITY.

CHAPTER XII.

STERILITY.

I EXPLAINED at the beginning of the chapter upon sexual impotence, that a distinction should be made between impotence and sterility. In the former instance the patient is unable to perform the sexual act, and in consequence of this inability he is not only impotent, but also sterile. As a matter of fact, however, he is only sterile in a secondary and derived sense, for, if his impotence is removed, he will be perfectly capable of procreation, but when the defect is really one of sterility, then, although he may be and frequently is perfectly capable of coition, he is incapable of procreation.

Varieties.—Sterility is usually due to three causes, called *aspermia*, *dyspermia*, and *azoöpermia*. In the first, ejaculation of semen is wanting, and this is absolute, that is to say, during erotic dreams or during and after the act of coition, no semen is emitted; in the second, the patient is incapable of an emission, although the semen leaks away *post coitum*, and he also suffers from nocturnal pollutions; while, in the third, the patient, although perfectly capable, to all appearances, of performing the sexual act, the power both of connection and ejaculation being perfect, is yet incapable of procreation on account of the absence of spermatozoa in the seminal emission.

Let us first consider the variety known as

frequently the case, so that it would seem as though there were psychical reasons, as well as physical ones, for these cases of aspermatism. In medical literature there are instances, where from a variety of causes, *aspermatism attends the sexual act*, and yet the patient *during sleep has a seminal emission*. Where both testes are absent no emission occurs, as a rule, but if only one is wanting the patient is still not only potent, but frequently fruitful as well, provided there be no disease of the testicle itself to interfere with the production and emission of spermatozoa (see Anorchids, p. 363).

This variety of sterility may also be caused by a *defect* in the *vasa deferentia*, which in some instances seem to be entirely wanting, or else they are occluded in some portion of their course, and do not terminate as they normally should in the vesiculæ seminales. Little gives an example of this kind taken from a dissecting-room subject in whom the genital organs were apparently perfectly normal, the testes being of proper size, shape and firmness, but in whom there were no vasa deferentia. The epididymis of the left testicle ended immediately below the globus major in a round, blunt extremity, having no connection with the cord. The epididymis of the right testicle ended at just about the situation of the globus minor in a round, blunt extremity, also without any connection with the cord. Both epididymes contained a light-colored, semi-solid matter which was found to be full of spermatozoa; the veins of the cord were varicose but otherwise normal. The prostate was normal on the left side. There was no trace of the vas deferens on this side, and only the rudiments of a seminal vesicle which contained an opaline-colored fluid devoid of spermatozoa. On the left side there was no excretory canal, and the ejaculatory ducts were absent. On the right side there was a trace of the vas

Gonorrhœa may possibly produce aspermatism from inflammation of the *testicles* and of the *spermatic cords*, but I should be inclined to consider this disease as rather a cause of *azoöspemia* than of aspermia, because in the cases I have seen the patient is perfectly capable of coition and of ejaculation (which oftentimes is as abundant as usual), but the semen in these instances is devoid of spermatozoa. I shall consider this point more fully when I come to speak of *azoöspemia*, and I merely mention it here because it is spoken of by some authors as a possible cause of aspermatism.

Neuralgia of the testicle may sometimes induce this condition of affairs (Peyer), and in such instances the aspermatism may be either partial or complete.

Varicocele is another cause (Bennett). In an article in the *London Lancet*, Mr. Bennett states that his colleague, Mr. Rouse, informed him that he (Rouse) had recently had under his care a patient with a double varicocele in whom there was no evidence of any seminal secretion at all, until after the varicocele had been cured by an operation, when the testicles, by degrees, assumed their natural size and activity.

Injury to the Urethra.—Schmitt speaks of sterility as being produced by injuries to the urethra, but the case he details is by no means clear. His patient was a strong, healthy man who had never in his life had an emission either during coitus or masturbation, nor had he ever had nocturnal pollutions. His sexual health was good, and his powers of coition were all that could be desired up to the point of the orgasm, but when this arrived his penis would become flaccid, the erection would be lost, and no emission would occur. The same was true of his erotic dreams. It is worthy of note that the patient had had a vesical calculus for which he had been operated upon by

smallest 0.0015. In this case it would seem as though the cause was not only due to obstruction of the vasa deferentia, but also of the ejaculatory ducts and probably of the ducts of the prostatic gland.

Prostatic enlargement may also be the cause of sterility in the male, compressing the ejaculatory ducts and probably obliterating the glandular tissue of the prostate itself, and the converse (*atrophy*) is also true, for Schultz gives an instance of a man who never but once in his life had an emission from masturbation or in his sleep; he was married, and had been for some years. He never had an emission during sexual intercourse until three years after his marriage, when, on three occasions, he stated he had ejaculation, but never since. These three occasions occurred immediately after one another. An examination showed nothing wrong with the external genitals. The meatus was slightly narrow. A sound which was introduced went into the bladder without any trouble excepting for the irritation usually found in the prostatic urethra. This portion was somewhat sensitive. Rectal examination showed almost complete absence of the prostate; all that could be detected by the finger was a small, flat, circular body, the size of a kreutzer, one and one-half lines in thickness; no seminal vesicles could be detected, but the vasa deferentia could be felt on both sides. Treatment in this instance was of no avail.

A similar instance of *prostatic atrophy* is given by Lindén, but in his case the prostatic atrophy, while associated with aspermia, was also attended by a loss of sensibility in the lower portion of the body. Lindén states that upon examining his patient *per rectum* the prostate was found to be in the highest degree rudimentary, and was discovered with difficulty, giving the sensation under the finger as of a flat and slight elevation. A sound could

this patient both the testicles and epididymes were unaffected. In patients, however, where these organs are very much affected or broken down by the disease, and especially if the testicles participate in the tuberculosis, the probabilities would be very great that the men would be not only impotent, but sterile as well.

Diabetes.—In the chapter on impotence I mentioned the fact that diabetic patients, especially toward the end of their disease, lost more or less of their sexual vigor, and this disease is also assigned as a cause for aspermatism. Lindén, in the case just mentioned, stated that his patient had never felt any sexual desires. He had never had erections nor emissions nor had there been any loss of semen, either in the natural way or in the urine. While it is possible, of course, that such a condition of affairs may occur, it is very uncommon, and in the case that Lindén speaks about there are other reasons which would amply account for the inability to secrete semen.

Another cause of aspermia is stated by Lallemand, Grimaud de Caux and Martin Saint Ange as being due to a *regurgitation of the seminal fluid into the bladder* during coitus, instead of being propelled forward, occasioned, according to these authors, by a disagreeable trick performed by the woman during the sexual act, of compressing the perineum at the time of the orgasm in her male companion, whereby the semen is prevented from flowing out through its natural channel, being forced backward into the bladder, and this probably produces chronic dilatation of the mouths of the ejaculatory ducts and of the prostatic urethra, with stasis of the semen at this point. This is done in order to avoid unpleasant consequences to the woman in the shape of impregnation. Lallemand also speaks of aspermatism as due to *deviation of the openings of the ejaculatory ducts by constriction in the deep urethra*, but I

be *aptus coiere*, he is also *aptus generare*, and spermatozoa are, in such old people, secreted long after the sexual desire and the capacity for coition have passed away.

In other instances aspermatism seems to be due to some *lack of harmony* between the two performers in the sexual act. Devergie gives an instance of a man of thirty-six who was married to a woman of twenty-six, both in perfect health, but the husband during the performance of his marital duties was unable to ejaculate, though the erection and stiffness of the penis were complete, and he was forced to retire before the consummation of the act. This condition is the more remarkable, because this same man experienced no obstacle whatever to the emission of semen when he cohabited with other women, and he had even had children by a former marriage, so that the case would seem to have been due to some lack of harmony between the two persons and not to any physical fault in either.

Schultz also furnishes the notes of a patient, aged thirty-seven, in whom all the sexual functions appeared to be perfectly normal, except that he never had had *emissio post coitum*, no matter how long coitus continued; but he did have erections during sleep with nocturnal pollutions. Hammond has suggested that this condition of affairs is due to the erections being too powerful, and he narrates the history of a patient of his, a man forty years of age, who had been temperate in sexual matters up to the time that he "formed relations with a very attractive young woman who drew largely on his powers. After the first connection he never had another without the erection being remarkably vigorous, and lasting sometimes an hour after the act had come to an end. During these connections not a drop of semen escaped from the urethra, nor, so far as I could determine, was there at such times any passage of the seminal fluid into the bladder."

fluence of liquor, that is to say, when the patient is more or less drunk. Under such circumstances I have known of several instances where patients have reported to me that, notwithstanding vigorous coitus, no emission whatever occurred, while, during a condition of sobriety, connection with a woman was perfectly normal, and was attended with a seminal emission. Peyer gives the details of a case where temporary aspermatism, with absence of orgasm and loss of all sensation during ejaculation, occurred from excessive beer drinking, and it is pretty well established that the intemperate use of spirituous and malt liquors will very decidedly interfere with the formation of spermatozoa and produce a condition of oligospermia attended, not infrequently, with slight atrophy of the testicles.

Irritation of the prostatic urethra is mentioned by Peyer as a possible cause of aspermatism, and he gives the history of a man afflicted with sexual neurasthenia, who, in early life, had masturbated for a year and a half without having any emission; he subsequently married, and, while perfectly able to perform his marital duties, was never capable of an emission. He used to copulate to the point of fatigue, when his penis would become flaccid and incapable of further action. After each coition, as was natural, he was greatly exhausted. He never had nocturnal pollutions, although the *libido sexualis* was very marked. In ten examinations of the urine, spermatozoa were found seven times. There was in this instance marked irritation of the prostatic urethra, and local medication by the use of astringents was instituted. Soon after the treatment was begun, the patient had his first nocturnal pollution, and, while coition was less exhausting and the erections more lasting, there was still no emission. After his fatiguing sexual exercises he would go to sleep and have a nocturnal emission. Now comes the most singular part of

but it may also be caused by the *absence* of the prepuce. An example of this latter is recorded by Curling, and occurred in a young man of twenty-three, who was incapable of a seminal emission during coitus, no matter how prolonged the sexual act might be. It is, however, noteworthy that he had nocturnal emissions, and at those times the fluid contained spermatozoa. Treatment by tonics and electro-magnetism was of no avail, and, as a last resort, Curling painted the glans penis with acetum cantharidis, which raised a blister and left the part in a very sensitive condition. Curious to state, this radical treatment succeeded; the patient afterward married and seldom failed to complete sexual intercourse. I personally know of a number of instances where, after circumcision, patients have informed me that the seminal emission was retarded, as compared with what it had been when they still retained their long foreskins, but I have never known of an instance in which ejaculation was delayed to such an extent as to be obnoxious. Indeed, patients have repeatedly told me that the sexual act had been improved after the operation, so far as pleasure was concerned, and one man seriously informed me that he had never known what a satisfactory coitus was until after he had lost his prepuce.

The part that *exhausting diseases*, such as phthisis and the like, have upon the formation and ejaculation of semen is an open question, but my own experience leads me to believe that they exert but slight, if any, influence whatever, so far as the question of *aspermatisms* is concerned. When we come to consider the question of *azoöspemia*, we shall find they play some part, as do *chronic alcoholism* and *morphinism*.

Defects of the penis, such as hypospadias and epispadias, are not necessarily causes of sterility any more than they are of impotence, as I have shown when speaking else-

he had a fearful pain attended with hemorrhage and seminal emission. This accident, although severe, seems to have been radical in the way of treatment, for Hirtz states that, as a result, he had seminal emissions on subsequent coitus and impregnated his wife, a thing which had never happened before. The man had had frequent attacks of gonorrhœa, and it is more than probable that his dyspermatisms was due to a stricture which, during copulation, was ruptured, nature assuming the rôle of the surgeon and effecting, in this extraordinary manner, a radical cure.

Besides this cause *traumatic paralysis of the nerves* supplying the sexual organs may sometimes be the cause of dyspermatisms. Bernhardt gives the history of a man who fell off a scaffold while painting, and who had anæsthesia of the perineum, of the scrotum, and of the penis from the glans to the crus. There was no loss of sensation above the pubes, nor of the testes which were responsive to pressure. He had occasional erections, and once had a nocturnal pollution. His powers of coition were good; he retained the pleasurable sensations usual in the act; erection was permanent and intromission of the penis was all that could be desired; but although orgasm was present, there was no ejaculation at the time of coitus, the semen apparently being retained in the urethra and flowing out slowly, drop by drop, after the connection. He had his first coitus four months after the accident, and Bernhardt ascribes the apparent dyspermia to a nervous loss of the contractile powers of the ejaculatory muscles.

Neuralgia of the testicles, associated with *neuralgia and anæsthesia of the penis*, may also be the cause of dyspermatisms and consequent sterility. Sullivan gives a curious instance of a man who, during coitus, had no disturbance until the orgasm was reached; then his penis would become numb, and not only would pleasurable sensation be

lost, but an excruciating pain in the penis would supervene, and so intense would this pain finally become, on the slightest motion, that it was impossible for him to do anything but lie quietly with his penis "*in situ*," as Sullivan says, for an hour before separation or until his penis had become flaccid, when the semen would gradually ooze away. There is no possibility of saying whether this was due to an irritable stricture of the urethra or to a true neuralgia, as Sullivan is silent upon the point.

Schultz gives the case of an Englishman, one Lord R—, twenty-eight years of age, who was unable to have any ejaculation during coitus, until after he had indulged in connection from one and one-half to two hours, when there would be a slight emission. This process, as would naturally be expected, was so debilitating that the "noble lord" was obliged to remain in bed for twenty-four hours after each sexual attempt. The case is extraordinary in more ways than one, not only from the retardation of the seminal emission, but also from the fact that he was enabled, if the statement be correct, to indulge in coitus for such a length of time. I admit to feeling that there must be some error, for although his erections are stated to have been strong and vigorous, my experience with patients leads me to doubt if any erection will last for a couple of hours, no matter how strong or potent a man may be.

In addition to the cases already enumerated, dyspermia may result from *fistulous openings into the ejaculatory ducts*, whereby the semen is propelled elsewhere than outwards.

A case is related where the fistula opened into the rectum in a man who had been operated upon bilaterally for stone at the age of fifteen. At nineteen, self-abuse was unattended by any ejaculation, and, later on, if he had a movement of the bowels after indulging in coitus, he no-

ticed that semen was mixed with the alvine evacuation. Unfortunately, nothing is said in this case about the absence of ejaculation during coitus, but it is taken for granted there was none (Simonin).

Congenital phimosis may also produce dyspermatism. Labarthe mentions the case of a man, aged twenty-nine years, who had been married for four years without having children. The preputial orifice in this patient was very small, only admitting a No. 12 French bougie. During micturition the urine would be retained in the prepuce, which would become enormously distended, the urine subsequently escaping drop by drop. The same thing happened with the semen during coitus. Circumcision cured the sterility.

AZOÖSPERMIA AND OLIGOSPERMIA.

The first word is used to signify those cases of sterility in which, while there is no lack of sexual power and while the seminal emission is complete and normal, sterility results from the absence of spermatozoa in the fluid emitted during coitus (Pl. VI.). So far as the gross external appearances are concerned, the patient's semen is in perfect condition, and there is nothing whatever to indicate, except by a microscopical examination, that the subject is not perfectly capable of procreation. This condition may be either *temporary* or *permanent*.

The second word denotes those cases in which there is sexual power, but where the seminal discharge is scanty, and but few spermatozoa are found in the emitted fluid. These spermatozoa are in the majority of cases dead or dying, and if, perchance, they are still alive, they are deformed and lacking in the brisk, energetic movements which characterize the healthy animalcule and speedily per-

ish, even while the examiner is watching them (Pl. VII.). The azoöspemia may be *congenital*. Hirtz gives a singular instance of this kind of sexual derangement which would appear to have been not only congenital, but also hereditary. The case is briefly this:

A woman who had been married five years consulted him on account of having had no children. There was nothing in the woman herself that contraindicated maternity, but, nevertheless, she was treated for sterility in various ways without any result whatever, until Hirtz one day was visited by the husband, and, upon questioning him, he found that this man—who seems to have been, sexually speaking, exceeding vigorous and diligent, indeed, boastful of his copulative powers which he said he could use without fatigue no matter how frequently he indulged—came of a family in which his sisters were alternately sterile and fruitful, and this condition of things alternated with the order of their birth, the first and third being sterile, the second and fourth being fruitful, and, moreover, this peculiarity had other examples in his own family.

It appeared this man was capable of an emission, because, on the next day, Hirtz instructed him to bring some fresh semen, in a condom enclosed in a glass, which was delivered to him while yet warm. This was examined without finding a single trace of spermatozoa, nor was this the only instance, for three other examinations made under similar circumstances gave precisely the same result. The man was put under various kinds of treatment, but without the slightest benefit.

Sexual excess is one of the commonest causes of temporary azoöspemia. Liégeois gives the case of a medical student, who, having indulged in sexual intercourse three or four times per diem for ten successive days, presented

himself to have his semen examined. Seven or eight examinations were made with a negative result, so far as the presence of spermatozoa was concerned. The young man was, sexually speaking, perfectly healthy, there being nothing the matter with his genital organs. A few months later he presented himself again for examination, and in this instance he had been continent for three weeks. At the time of the second examination, the semen was found perfectly normal with an abundance of spermatozoa. Casper also relates the case of an aged naturalist, similar to the one of Liégeois. This old gentleman, if he indulged in coitus repeatedly, would have oligospermia and azoöpermia; that is to say, the amount of semen emitted would be very small and entirely devoid of spermatozoa. After resting a few days, upon repeating the sexual act the emission would be found normal in amount and containing living and healthy spermatozoa. Every surgeon has had in his experience patients who have informed him that after sexual congress repeatedly performed on the same occasion, at the final coitus no emission would occur, and it is clear that this condition is purely temporary, not only regards the absence of spermatozoa, but also as regards the amount of semen ejaculated. Vecki, however, denies this, and maintains that in strong persons who repeatedly perform the sexual act the number of spermatozoa, instead of diminishing, increases, and that they are active, well developed, and viable. Of this he claims to have abundant clinical proof. I cannot agree with Vecki's views upon this subject.

Other excesses, besides those from coitus, may also produce azoöpermia, such as reckless and *intemperate masturbation and spermatorrhæa*, provided this latter be abundant and steady, due to the fact that the testes are unable to respond to the continuous drain made upon them. Hence, in these cases, the patient is often afflicted, not

only with aspermatism, but also with oligo- and azoöspemia.

Syphilis has been variously regarded by medical writers in relation to azoöspemia, some considering it as a possible cause for the absence of spermatozoa entirely apart from any local affection of the testis, some viewing it as having no influence upon this condition (Godard), while others have looked upon it as a common cause. There is little literature upon the subject, and but few cases have been reported in which azoöspemia can properly be ascribed to syphilis in its constitutional aspect. Lewin reports six cases in which he considers syphilis as a cause of azoöspemia. Of these six, four are in my opinion, doubtful; that is to say, I think it open to question if they were cases of syphilis; that leaves two in which syphilis may be admitted. In these two, spermatozoa were absent in one and present in one. Both of these were probably cases of old syphilis. One was certainly a case of orchitis. Of the four doubtful ones, spermatozoa were found in two, and in two none were found; thus, of these six cases, if we admit the doubtful with the non-doubtful ones as syphilitic, we find that in fifty per cent there was azoöspemia, and in fifty per cent the semen was normal. He says that in those instances where there were indubitable signs of a syphilitic dyscrasia, the most marked was the absence of spermatozoa.

Hand, while of the opinion that syphilis seldom if ever has any part in producing azoöspemia, gives the history of ten cases of syphilis where the semen was examined. Of these ten cases, in five, or fifty per cent, the semen was normal; two, twenty per cent, were the subjects of azoöspemia, and three, thirty per cent, of oligospermia. Reckoning those cases in which any spermatozoa are present in the semen, we find the percentage to be eighty,

and twenty in which there are no spermatozoa at all. In these ten cases it is interesting to note whether the azoöspemia is more apt to occur in the early or late stages of the disease, and I shall consider cases of early syphilis as those where the disease is of one year's duration and under, and the late where it is of more than one year's duration. Of these ten cases, six were cases of early syphilis, four of late. Of these six early cases, in four the semen was normal, and in two there was oligospermia, where there were no living spermatozoa but many dead ones. Of the four cases of late syphilis, one was normal, one had oligospermia, and the others had no spermatozoa at all. It is noteworthy, therefore, that the earlier the stage of the syphilis the less the probability of azoöspemia occurring.

Bryson gives the history of six cases. In these, the syphilis ranged from twenty-one months to seven years before marriage. Four of these six men had children in the first few years of married life, that is, between one and four years, but none of them had any children later.

One of the women aborted at the seventh month, and one married couple had no children at all. Of the four fruitful marriages, the children were born in the first few years of married life, that is, probably, when the syphilis was comparatively young, but as the syphilis grew old there were no further conceptions.

In Lewin's cases only once is the condition of the testes mentioned. In Hanč's there is no history of the state of the testes, except in one instance where a double epididymitis existed, and of Bryson's patients, in only one was there any evidence of disease, either of the testes or of any other portion of the genital organs; but in that one, atrophy of the left testis resulted from gonorrhœal epididymitis.

It is also worthy of remark that many of these cases

rior pharyngitis with a small ulceration of the right tonsil. There was no eruption and no alopecia, and the man himself denied ever having had an initial lesion. Examination of the semen showed an entire lack of spermatozoa. The testes were sound, except that on the left side there was a small induration of the epididymis resulting from a previous clap. The right testis was apparently healthy, the prostate and seminal vesicles were normal, and the urethra showed no stricture. He was placed upon mercury, and as recovery progressed and while still under treatment, spermatozoa were found in the semen, at first few in number and sluggish, but as improvement went on they became more abundant and lively. His wife became pregnant and was in due time delivered of a child, which Casper regarded as syphilitic, although the mother, according to him, had escaped infection. One positive fact is worth any number of negative ones, and with this case in evidence we are forced to admit that, while the question is yet open to doubt from insufficient data, it would appear as though syphilis *might, per se*, produce such an alteration in the secreting function of the testes as to render the semen temporarily devoid of spermatozoa, even during the earlier stages of the disease, and it may exceptionally happen that treatment, if instituted early and vigorously, causes a return of the spermatozoa in the semen. Beyond that it is impossible to say anything. Of course, as regards cases of orchitis and epididymitis the matter is different, and upon this point I shall speak a little further on.

Gonorrhæa is the commonest of all the causes which induce azoöspemia, but only when both epididymes have been attacked by inflammation. Gosselin, Godard and other writers have carefully studied this subject, and it is to their researches that we are primarily indebted for

much of our knowledge on this subject. If, however, only one epididymis has been attacked the surviving organ performs the work for both, although this has been denied by Sinety and Hirtz, who believe that, even if the inflammation is one-sided, the patient becomes sterile in consequence. This view I cannot accept, as it is entirely opposed to my experience.

Chronic alcoholism has been recognized from ancient times as a cause of sexual debility, impotence and sterility, and recently Simmonds, in an admirable paper on "The Influence of Age and Disease on the Formation of Semen," has pointed out the almost fatal influence that chronic alcoholism exerts in inducing azoö spermia. Simmonds gives the result of 200 autopsies made by him during the year 1896, and of these 200 cases, 14 deaths were due to chronic alcoholism. Of these 14, 5 were complicated with pneumonia, 1 was complicated with peritonitis, and 1 with sepsis. The rest died as a direct consequence of drink. In 10 of these 14 men (nearly 72 per cent), no spermatozoa were found in the secretion of the genital organs. In 2 (14 per cent) but few spermatozoa were found, and in 2 (14 per cent) spermatozoa were found in abundance. If now we combine those cases which, on postmortem examination, were found to be suffering from azoö- and oligospermia, they will be found to number 12 in a total of 14; in other words, nearly 86 per cent were damaged in their generative functions. As the pneumonia, peritonitis or sepsis cannot be regarded as playing any part in the azoö spermia, we must agree with Simmonds in his summing up when he says, "Chronic alcoholism exerts a most deleterious influence on the formation of semen, which, in an overwhelming majority of cases, induces azoö spermia." The pathological reason for this condition is to be found in fatty degeneration of the testes

which is so frequently found in chronic drunkards (Hoffman).

Opium and its Alkaloids.—Medical opinion has been divided as to the effect that opium plays in checking the formation of the spermatozoa. In a former portion of this work, the influence this drug exercised upon the genital organs, as regards their capacity for coitus and the production of impotence, was discussed. Dudgeon in his paper states that the inordinate use of morphia induces impotence and sterility. Rosenthal gives the history of two cases of morphine users, the first of whom had been in the habit, for a year past, of injecting 0.5 (7½ gr.) of the drug daily. In this patient the erections were weak and infrequent, and, if in the evening he took wine to prolong sleep, occasionally, he would have pollutions. Within ten minutes after the pollution, he would bring Rosenthal a very thin and scanty secretion of semen in which were a few motionless and stunted spermatozoa. These spermatozoa would not respond to a diluted solution of sodium. In the second case, which was that of an older morphine victim, who had for three years used a daily injection of from 0.6–0.8 (9–12½ gr.) of the alkaloid, on account of headache and sleeplessness, the patient was afflicted with paresis of the detrusor muscles of the bladder whereby he was unable to completely empty this viscus. After long and repeated pressure in order to get rid of the last few drops of urine, a white fluid exuded which, under the microscope, was clear, bright, and of thin consistence, containing rhombic seminal crystals, but not a trace of spermatozoa. It may, therefore, be said that perhaps in the earlier stages, opium or its alkaloids, while exercising merely a stimulating effect, do no injury to the genitals; after a time, however, they decidedly react upon the functions of these organs, which, however, may be restored

when the drug is left off (Levinstein), but not always to the former normal degree.

Tobacco.—We hear a great deal of the anaphrodisiac properties of tobacco, but, according to my experience, it has very little, if any, effect either upon sexual virility or upon the formation of the semen or of the spermatozoa, notwithstanding the fact that Peyer, Hanč and Curling consider that its abuse exercises a deleterious influence upon these organs.

Corpulence.—When discussing the question of impotence I called attention to the fact that obesity might play a part in producing sexual disability from mechanical means, and also by inducing a distaste for sexual pleasures. Although reckoned as one of the causes, I believe it to be quite an infrequent one, and so far as it induces sterility, I think it still more rare. I have been able to find but little in literature bearing upon the subject, nor from my own experience can I state that I have seen cases wherein obesity produced either aspermatism or azoöspERMATISM.

Kisch, however, says that he has repeatedly examined the semen of men, the subjects of *lipomatosiS universalis*, under the microscope, and that he has frequently found but few spermatozoa. Many times they were immobile, and not infrequently absent. He says that in nine per cent of the cases of over-corpulent men whom he has examined, the microscopical investigation of the semen showed only molecular detritus and spermatIc crystals, but no spermatozoa. In the female, however, gynæcologists not infrequently speak of corpulence as a cause of sterility, and it is possible that the causes which produce it in the woman may play a similar part in the male.

Constitutional Diseases.—How far phthisis plays a part in the production of sterility has been a mooted point among surgeons, some claiming it as a fruitful source,

others denying that it has much, if indeed any, influence.

Lewin has collated a series of cases of which there were forty patients in one set and fifty in the other. In the first series sixteen of the men died of phthisis. In ten of these sixteen (63 per cent), spermatozoa were found in some portion of the genital organs. Of the second series, twelve patients died of phthisis. In eight (66 per cent), spermatozoa were found in some portion of the sexual organs. It is worthy of note that, where no spermatozoa were found in the genital organs, the patients had been ill for some time, and were much emaciated. There was one exception, however, to this general rule; in the second series one case is recorded where the disease of the lungs had been of long standing and yet spermatozoa were found. This occurred in case 8, but even this can hardly be considered as an exception, for only two small ones were found, so that, practically, it may be said that where the patients have been ill for some time and are much exhausted, the secretion of spermatozoa ceases.

Busch has collated 117 cases of examination of persons who died from a variety of causes with the following results: In 7 cases where the death was sudden, either from accident or suicide, in 4, the spermatozoa were abundant, in 3 they were few, but in no cases were they entirely absent. In 14 cases of acute diseases, that is to say, where the disease had not lasted more than four weeks, in 9 the spermatozoa were abundant, in 3 they were few, and in 2 they were absent. In 42 cases of chronic diseases, such as phthisis, pneumonia, cirrhosis, etc., spermatozoa were abundant in 8 cases, few in 20, and absent in 14. Of these 42 cases, 17 were cases of phthisis. Of those 17 cases, in 1 the spermatozoa were abundant, in 11 they were few, and in 5 absent. In various

other chronic diseases, such as nephritis, carcinoma, etc., in 13 the spermatozoa were abundant, in 13 they were few, and in 11 absent; so that out of 117 cases of various diseases, in 35 the spermatozoa were abundant, in 50 few and in 32 absent; and of these 117, 17 being cases of phthisis, the spermatozoa were abundant in only 1, few in 11, and absent in 5.

Cordes gives the result of his experience in 73 autopsies which he made, 36 of the persons dying from acute and 37 from chronic diseases. In the 36 acute cases (of all kinds) the spermatozoa were entirely absent in 15. In 12 they were scanty, and in only 9 were they in normal quantity. In the 37 chronic cases (of all kinds), in 16 the spermatozoa were wanting; in 9 cases they were diminished, and in 12 they were normal. Out of these 73 cases, 14 were cases of phthisis, and of these 14 phthisical subjects in none were the spermatozoa normal. In 4 they were few, and in 10 they were entirely absent.

Cordes states that the age of the individual played no part whatever in either of the two groups, and he furthermore goes on to say that, in both normal as well as in abnormal spermatogenesis, fat corpuscles are always found in the cells of the tubules of the testicles.

The last series of cases which has been published is that of Simmonds, and he gives the results of 200 autopsies made by him, and these include cases of phthisis, syphilis, diabetes and the like. Out of these 200 post-mortem examinations, there were 37 cases of phthisis. In those 37 cases spermatozoa were abundant in 25, were few in 4, and were absent in only 8, almost reversing the results which we have obtained from the other observers; and these cases of phthisis were taken indiscriminately, many of them being chronic and of long standing. In summing up his paper he gives it as his opinion that acute diseases

never induce azoöspERMIA; chronic diseases, with the exception of affections of the spinal cord, but seldom. Even severe cachexiæ rarely have any effect upon the development of the semen.

Chronic pulmonary affections in only a very small proportion of cases interfere with the formation of spermatozoa. On the other hand, pubescence is frequently delayed under the influence of these affections (Simmonds).

In determining whether any given disease modifies the development of the semen or of the spermatozoa, it should be borne in mind that the latter are often present or absent within physiological limits, as we shall see when we come to discuss the frequency of sterility among married people.

Diseases of the Testis and its Appendages.—The diseases of the testis which may induce azoöspERMIA can be briefly summed up as follows: Atrophy, localized syphilitic affections, carcinoma, sarcoma, enchondroma, tuberculosis, hydrocele and gonorrhœal epididymitis. To begin with *atrophy*. In cases where the atrophy is congenital it goes without saying that the secretion of spermatozoa is interfered with, if not abrogated, and under these conditions the patient is usually impotent as well as sterile, because other portions of the genital organs also suffer from a lack of development in common with the testis, and upon this point I shall refer the reader to the chapter on sexual impotence, in which this subject is discussed. But there are other cases in which the atrophy may be acquired, either as the sequence of syphilis or of gonorrhœa, or in which the atrophy results from varicocele, from a blow, from compression by injury or from a large growth in the body or tunics of the testis, or from mumps. Under such conditions, the body of the testis itself disappears, and if the injury be on both sides, the patient becomes absolutely sterile and may, at a later period, be impotent as well.

Orchitis.—A few pages back I discussed the question how far *syphilis, per se*, apart from any localized manifestation in the testis itself could be assumed as a cause of azoöspermia, and the evidence went to show that it *may* be a cause, although I believe it is *not common*. When syphilis, however, attacks the testicle, particularly in the diffused form, the function of the organ ceases and no spermatozoa are secreted. This statement, however, is subject to modification, only if the entire testis is affected; but when any part of the organ remains healthy it will continue to secrete spermatozoa, even though most of the testis itself is implicated and of no further physiological use. The same is true of *carcinoma, sarcoma, enchondroma and tuberculosis*; where these diseases implicate the entire testicle that organ is dead and of no further service, and if both organs are attacked, the unlucky subject of the disease becomes absolutely sterile, although not necessarily impotent.

Parotitis.—I have already mentioned in another part of this work the part which inflammation of the parotid gland (mumps) plays in the production of sexual impotence, but so far as the question of sterility is concerned, I can find no evidence, either in my own or in the experience of others, to show that it produces either azoö- or oligospermia. The only way in which this might happen would be in consequence of the atrophy of the testicles which is not infrequently a concomitant of the mumps, and as this disease seldom leaves any permanent blocking up of the vasa deferentia, such as occurs from gonorrhœal epididymitis, I am very strongly inclined to doubt if it can be properly considered as a cause of sterility.

Hydrocele.—I believe myself that azoöspermatism from compression by *hydrocele, hematocele or any similar tumor* very seldom occurs, indeed is very uncommon, but Rou-

baud gives a curious and interesting case, which is so unusual that I give it here in full. It was of a young man, twenty-six years of age, who was affected with a double hydrocele. He was married and the father of two children who, apparently, were born before his affection came on, or before it attained a large size. In addition to this hydrocele, for which he consulted Roubaud, he complained that he was sterile, and, upon examination, it was found that the semen was devoid of spermatozoa. Roubaud very naturally supposed that he had to deal with a case of atrophy of the testes due to the hydrocele, and urged the man to have this double hydrocele tapped. The patient was very timid, but after a good deal of persuasion permitted Roubaud to tap him, although he declined to have an irritant injection made into the sac, preferring, as he said, to have his hydrocele re-tapped, if necessary, rather than undergo a radical cure for the disease. The man's duties obliged him to ride much on horseback, and, as was to be expected, the hydrocele returned, but in the interval of the tapping of the tumor and its filling up again, the patient not only recovered from his sterility but impregnated his wife, and Roubaud was now able to find spermatozoa in the seminal fluid. The hydrocele went on as hydroceles usually do and became as large as ever. The spermatozoa again disappeared from the semen, but reappeared when the fluid was evacuated the second time.

Dieu expresses an opinion similar to that of Roubaud, for he states that upon postmortem he has seen five cases of old and large hydroceles where he found a large number of spermatozoa in the seminal vesicles upon the side where there was no effusion into the tunics of the testes, but that they were absent in the vesicles of the opposite side where there was a hydrocele.

as in those cases where this portion of the genital organs is attacked by *tuberculosis*.

Oligospermia may be due to a variety of causes. It may occur from excesses ex coitu seu masturbatione, from spermatorrhœa, from senile marasmus, alcoholism, carcinoma, diabetes mellitus, chronic tuberculosis, chronic renal affections, chronic diseases of the brain, and from various acute diseases (Simmonds).

ANOMALIES OF THE TESTES.

A few pages back I mentioned the fact that absence of the testes has been assigned as one of the causes of aspermism, and it will be interesting to discuss more fully how far the lack of these organs induces sterility from aspermia. The three recognized varieties of this condition are as follows:

Anorchism; where the testes are entirely absent, being found neither in the scrotum nor in the abdominal cavity.

Cryptorchism; where the testes are retained in the abdominal cavity; and

Monorchism; where only one testicle has descended into the scrotum, the other one being either entirely absent, or retained in the abdomen.

Anorchism.—This is an exceedingly rare affection. In the examination which Mr. Marshall made of 10,800 recruits, he found no anorchids, and, in more recent times, Senn, in an examination of 9,815 volunteers for the American army found only one. If the testes are absent, naturally no spermatozoa will be found in the secretion, but the statement that subjects of this deformity are incapable of a seminal emission during coitus must be made with reserve. It is, at present, generally accepted that the semen is a composite fluid made up of the secre-

tions from various organs, the testes producing only the spermatozoa with, perhaps, a thin, scanty fluid in which they move; hence if the seminal vesicles and prostate glands of these cripples be normal, ejaculation occurs during coitus, although, of course, the fluid is sterile.

Godard gives a case in point of an anorchid whom he had an opportunity of examining. While aspermatism was present in coitus, the man was capable of nocturnal pollutions attended with ejaculations. This is analogous to what has been already said when we were discussing the question of aspermatism in persons in whom both testes were absent, and cannot be reasonably quoted as an absolute proof of aspermatism in anorchids. Unfortunately, Godard says nothing about the absence of spermatozoa, but I believe the statement that such persons suffer from azoöspemia would be perfectly correct.

Cryptorchism.—This also is a rare affection, perhaps not so uncommon as anorchism, but still seldom met with. Marshall, out of an examination of 10,800 recruits, does not mention finding a single case of cryptorchism, and Senn, in 9,815 examinations of recruits for the American army, mentions only one case in which neither testis had descended. This one case I have included above among the anorchids, but perhaps it more properly belongs among the cryptorchids, as it would be impossible, without a post-mortem examination, to state whether the testes were absent or merely retained in the abdominal cavity.

As to whether cryptorchids are capable of procreation, a great difference of opinion exists, some writers stating positively that they are sterile, while others hold that they are fertile.

Partridge, Curling, Godard, Pueche, and others are of the opinion, from an examination of several cases, that this class of males is sterile, because in all the bodies ex-

amined by them, while both testes were found within the belly, the semen showed no spermatozoa. Such testimony, of course, outweighs the statement that cryptorchids have been fathers of families, inasmuch as we are perfectly aware that accidents will happen, and, moreover, although a child bears a man's name it does not follow that the man is father of the child. This is verified, if proof be needed, in two cases. The first is reported by Godard, the man being a patient of Dr. Martin-Magron. He was a bearded, well-built fellow, apparently perfectly healthy, except that neither of the testes had descended into the scrotum. He had been married for three years before his wife had a child, but, unfortunately for the infant's paternity, it was judicially proved that the wife had been imprudent and that the child was another man's.

The second case is narrated by Debrou, and occurred in a cryptorchid who is said to have been the father of a boy. He admitted that the exercise of his marital rights gave him pleasure, and that he performed his duty frequently, but, alas! for the wife's good name, on postmortem no spermatozoa were found in the husband's testicles or elsewhere in his genital tract. Hence to bring children forward as evidence of a man's fruitfulness is of no value as a scientific test; the only way in which the fertility of such men can be proved is by showing that healthy spermatozoa exist in their seminal fluid.

Although in the majority of the cases where the testes are retained within the abdomen spermatozoa have been absent in the semen, yet occasionally the opposite obtains. Thus Beigel in Virchow's *Archiv* relates the case of a man twenty-two years of age, whose genitals were normal, except for the fact that the scrotum was an empty bag. In both inguinal canals swellings were felt, the right being larger than the left, and these were believed to be the

testes. Neither of them was compressed. Coitus was normal, frequently repeated, and was attended with emission. If, at any time, coitus was not indulged in for some time nocturnal pollutions took place. Beigel examined one of these emissions and found it full of normal spermatozoa. In other cases which have been reported where spermatozoa were found in the semen, it is worthy of note that the testes were lying either in the abdominal rings or just outside them; hence, from the evidence it would seem as though the following conclusion might be arrived at: where the testes are still retained within the abdomen and out of sight the person is probably sterile, but the nearer the testes come to their proper position in the scrotum the more likely is the patient to be fruitful.

Monorchism.—This, although more frequent than the other two varieties, is not common. Thus, of the two authorities already quoted Marshall states, that in 10,800 recruits he found eleven monorchids, in five of whom the right and in six the left testicle was not apparent, and Senn, in 9,815 recruits found thirty-four monorchids, in twelve of whom the right and in twenty-two the left testicle was absent from its proper place. In Senn's investigations the records varied from the ages of sixteen to fifty-one; in Marshall's the age is not given. In this class of cripples sterility is not a necessity; indeed, unless the descended testicle is affected with some disease which would interfere with the secretion of the spermatozoa, these patients are usually fruitful, the absence of one testis being no bar to the fertility of the person (Godard).

Castration.—The question whether men who have lost both testes are still capable of procreation has been for a long time a mooted point, and it is interesting, not only from the purely scientific side, but also from the possibil-

ity that it may have a practical bearing in the question of inheritance of estates. The ancient writers have noticed and commented upon the fact that, if bulls were put to cow immediately after castration, they were capable of procreation (Varro, Aristotle). Within more recent times this question has been taken up, and in the *American Intelligencer* for the year 1838 is an article headed "Note on the Power of Procreation after Castration," and an instance is there given of a boar which had been castrated, and, being, supposedly, perfectly harmless, was turned loose into the fields with some sows, with the result that one of these latter brought forth a litter, the young of which were marked like the sire. Although the boar covered several sows, this was the only one which was impregnated. In this instance it is not stated how long after castration the boar had intercourse. But in another instance the boar had been castrated two days before he covered a sow which was in heat. This he did with nearly all of his accustomed energy, and the consequence was that, in due time, she brought forth a litter of pigs. The barrow, from that period, never evinced any inclination for sexual intercourse. A third instance is given in the same journal of a horse which, immediately after castration, was put to a mare, and she brought forth a foal, incontrovertibly the offspring of this sexual union.

Later on some experiments were instituted by Obolonsky and Misuraca to test the question how long after castration spermatozoa are found in the genital tract. Obolonsky performed two experiments, both on dogs. In the first one the secretion of the vesiculæ seminales was examined seven days after castration, and abundant, but motionless, spermatozoa were found. On the addition, however, of a weak solution of bicarbonate of soda, the movements of the spermatozoa became quite lively, and

they appeared to be perfectly healthy. In the second dog the examination was made thirty-one days after the operation, when the contents of the vesiculæ seminales showed the spermatozoa abundant, but less in quantity than in the first case. These also were motionless, but became lively upon the addition of a weak solution of bicarbonate of soda. So far as microscopical appearances went they were perfectly normal, and Obolonsky is of the opinion that, had the dog at that time indulged in coitus, he would—everything else being equal—have proved fertile. Misuraca's experiments were made upon fourteen animals, to wit, seven dogs, four cats, and three guinea-pigs, with the following results: In the dogs, spermatozoa were found up to the seventh day; on the sixth day they were few in number and with feeble movements, but on the seventh they had entirely disappeared. In the cats, up to the end of the first seven days the spermatozoa were abundant but motionless. (Obolonsky's idea of adding a weak alkaline solution was not tried in these cases.) In the guinea-pigs, fertility remained, apparently, for a long time. Up to the fourteenth day the spermatozoa were fairly abundant, but in none of the animals were they endowed with motion outside of the body. On the seventeenth and twentieth days degenerative changes had begun to take place. On the first of these dates the spermatozoa, although present, were very evidently not normal, nor were they probably fertile. On the twenty-fifth day they had entirely disappeared.

From these experiments it is evident, that up to a certain time there are enough spermatozoa left, after castration, either in the seminal vesicles or in the vasa deferentia, to allow of fertile coitus; and this limit for dogs and cats appears to be seven days, and for guinea-pigs fourteen.*

* Obolonsky's second dog to the contrary notwithstanding.

Now let us see how it stands with man. Many stories are extant where a eunuch has been supposed to be capable of fertile coitus, but such cases are evidently more or less unworthy of credence, from a variety of causes which need not here be specified. Krügelstein, in Henke's *Zeitschrift* for 1842, relates the case of a merchant who had both his testicles removed for disease. The wound healed, he married, and his wife became pregnant; perhaps legitimately, perhaps not. Sédillot, in his "Manuel Complet de Médecine Légale," quotes a case of Boyer where this latter was consulted by a man who had lost both his testes, and subsequent to his mutilation he continued to cohabit with his wife, who became pregnant a short time afterward. The man, apparently, was suspicious and mentally disturbed, for he consulted M. Boyer, who, with a tact worthy of all commendation, in order not to disturb the peace of the household, told the man that such a thing was quite possible, but added that it was his last child, and that if any others appeared he might be quite sure they did not belong to him.

Krahmer reports the case of a young peasant, twenty-two years of age, who practised self-castration with a razor, the testes and scrotum being entirely removed. Twelve days after the operation he had a seminal emission during his sleep, but, unfortunately, no examination was made for the presence or absence of spermatozoa; so that this case goes merely to show that a seminal emission is possible twelve days after the loss of the testes.

Princeteau reported to the Société d'Anatomie et de Physiologie de Bordeaux, in 1889, the case of a young man who had been castrated for tuberculosis of both testicles. Notwithstanding the very clear absence of both testes, of which not a trace could be discovered on examination, this young man experienced frequent erections, indulged in coitus, and the ejaculated semen contained

THE EFFECT OF CLIMATE

There is a general impression that climate has a direct effect upon fertility, and it is not to be regretted that a considerable amount of time has been expended upon this question. The fact that the climate of the tropics is generally more fertile than that of the temperate zone is a well-known fact, and it is not surprising that various speculations have been advanced to explain this fact. The most common explanation is that the climate of the tropics is more favorable to the development of the germ. The most recent explanation is that the climate of the tropics is more favorable to the development of the germ. The most recent explanation is that the climate of the tropics is more favorable to the development of the germ.

It is not to be denied that there is a direct effect of climate upon fertility, but it is not to be denied that the effect is indirect. The effect is indirect because the climate of the tropics is more favorable to the development of the germ. The effect is indirect because the climate of the tropics is more favorable to the development of the germ. The effect is indirect because the climate of the tropics is more favorable to the development of the germ.

It is not to be denied that there have been cases in which climate has been shown to have a direct effect upon fertility, but it is not to be denied that the effect is indirect. The effect is indirect because the climate of the tropics is more favorable to the development of the germ. The effect is indirect because the climate of the tropics is more favorable to the development of the germ. The effect is indirect because the climate of the tropics is more favorable to the development of the germ.

self, and proved that families of pure European blood had been settled for upward of two centuries in places within the tropics, and that, in each case, the living representatives were quite equal to their progenitors in moral and physical development. That a sudden change of habitat may produce a temporary reduction of fertility is undeniably a fact; but it is likewise true that this function soon becomes re-established, and may even increase considerably, as is proved by the Spanish in Cuba and the French in Algeria."

"The same thing occurs in animals and plants. European fowls became almost sterile when first introduced into Bolivia; now they are once more exceedingly fertile."

I, myself, am acquainted with the details of the history of two brothers, Americans of English stock, who were born in the United States, and went to live in the tropics. The first, H—, went to Manila, P. I., and while on a visit to Calcutta married an Anglo-Indian of English stock. To that couple were born seven children while they were resident in Manila. The lady's parents were two English people living in Calcutta, who, while resident there, had a family of five children. The second, G—, also resided in Manila, and married a Spanish lady of pure blood. To this union were born four children. Most of these children arrived at adult age, some of them living in the tropics for several years after their birth, although all who grew up came sooner or later to the United States.

While it is impossible, as yet, from insufficient data, to make a formal statement with regard to this question of fertility as governed by changes in climate, it would seem not to be true that sterility necessarily occurs in Europeans who reside in the tropics, but, in view of the paucity of facts, we perhaps shall be wise in concluding with

Ripley that "sterility from climate as a single cause in this part of the world can neither be affirmed nor denied, from utter lack of evidence."

Frequency.—Up to recent times the belief has generally been held that the woman is oftener at fault than the man in cases where marriages prove unfruitful, but both gynæcological and genito-urinary surgeons are rapidly coming to the conclusion, after observation and investigation, that the man is more frequently to blame than has been supposed; the frequency, however, with which he is responsible for the sterile marriage is yet a mooted point among medical men, the proportion in which the responsibility rests with the male varying much with the statistics given by different authorities. Thus Busch puts the percentage at 27 from azoöspemia. Kehrer, in 40 cases of sterile marriages, found the male at fault in 16 cases (40 per cent), the woman in 24 (60 per cent). Of these 16 cases, in 14 (87.5 per cent) sterility was due to azoöspemia and in 2 (12.5 per cent) to impotence. Manningham states that there is one sterile man for every 30 sterile women, or a proportion of about 3.5 per cent. Courty states that the woman is at fault nine times out of ten, or in the proportion of 90 per cent, while Noeggerath, on the other hand, puts the female proportion as 6 in 14 (42-43 per cent). Blake and S. W. Gross state that the man is at fault once in every eight sterile marriages (about 12 per cent). Vedder, of Christiania in Norway, reports the result of his examination of 310 married women who had never been pregnant though married at least one year. In 50 cases he was enabled to examine the husband also. From the examination of these 50 couples he comes to the conclusion that in 70 per cent of the cases the husband is to blame for the sterility. Seeligmann states that in a large number of cases of *sterilitas matrimonii* which he

had had the opportunity of examining in the space of two years, in 75 per cent the man was to blame, and, in nearly all the cases, the sterility was due to azoöspemia from double epididymitis of gonorrhœal origin.

From a study of these figures it is evident that there is such a wide difference in opinion as to the proportion in which the male is blameworthy as possibly to vitiate the value of these statistics; but on one point there is no doubt whatever, to wit, the old idea that in cases of sterile marriages the female is always at fault is an erroneous one. Perhaps the cause of difference in these statistics may be due to the reasons pointed out by Pajot, who, in 1866, stated that out of 80 sterile marriages the woman was to blame in 7 (less than 1 per cent). In 1880 he puts it as high as 20 in 200 (10 per cent), while in 1889 he stated that it was about 20 in 100 (20 per cent). He states it would be very desirable that gynæcologists should publish their statistics, for only by the consideration of a large number of examinations would it be possible to arrive at some definite and trustworthy conclusion as to the true proportion in these cases of sterile marriages. Within a few years, Lier and Ascher have published three tables which are worthy of careful study, as being the best statistics on the subject at present obtainable. In the first table the total number of cases comprised 76 married couples. Of these 76, 30 of the men were not examined from one cause or another; 46, however, were. Of these 46, 21, or 45.6 per cent, were found to be suffering with azoöspemia; 6, or 13 per cent, were impotent, besides being afflicted with spermatorrhœa; 7, or 15.2 per cent, were found to have gonorrhœa and spermatorrhœa, and in only 12, or 26 per cent, were the men sexually healthy.

The second table consists of 151 married couples. In

these, 65 of the males were not examined; 86 were. Of these 86, 22, or 24.4 per cent, were the subjects of azoöspemia; 5, or 0.6 per cent, were suffering from impotence and spermatorrhoea; 34, or 40 per cent, had gonorrhoea together with spermatorrhoea, and in only 26, or 30 per cent, were the males sound.

The third series of cases comprised 227 married couples; of these, 195 of the men were not examined; 132 were. In 42, or 31.8 per cent, the semen was devoid of spermatozoa; 11, or 8 per cent, were impotent and suffering with spermatorrhoea; 41, or 31.1 per cent, had gonorrhoea with spermatorrhoea, and only 38, or 28.8 per cent, were sexually healthy.

These figures are worth pondering over. In these three tables the percentage of healthy males ranges from 26 per cent as a minimum, to 30 per cent as a maximum,—say an average of 28 per cent, leaving 72 per cent of men who, from one reason or another, are sexually damaged and incapable of procreation. With these figures before him the surgeon is compelled to reverse the famous dictum of Viduocq. Instead of looking for the woman he must look for the man, and, while the doctor may be unwilling to accept the fact that in cases of sterile marriages, 72 per cent of the men are to blame, still he is forced to the conclusion that there is quite a notable proportion in which the man is at fault. In the cases where a surgeon is called upon for a professional opinion as to the cause of the sterility, no accurate diagnosis can be arrived at until both husband and wife have been examined, and, in the husband's case, no opinion of any value can be given unless a microscopical examination of the semen is made, not once only, but repeatedly, in order to avoid any possibility of error, such as might be caused from the azoöspemia being temporary. It is well in all such cases to insist that the specimen of

semen sent for examination shall be the first which has been ejaculated after a period of continence of at least a couple of weeks, and even longer if necessary.

Affections of the spinal cord, such as paraplegia, hemiplegia, and locomotor ataxia, vary greatly in their effects in producing sterility. As regards the first, *paraplegia*, it may be doubted if it has any direct effect. When it produces sterility this is probably from causes dependent originally upon impotence produced by the injury, but even then the secondary result is often slow in its action, and, up to the time in which impotence results, the patient is capable of coitus and, probably, of fertility as well. Thus Montmollin's case, mentioned on page 302, would seem to show that the injury did not result in impotence until four years after its inception; but it is probable that in the majority of cases an injury to the spinal cord, low down in the lumbar region, will be followed, sooner or later, by impotence and, in consequence, by sterility. Bernhardt's case, given on page 345, is somewhat similar. There the man, a painter by trade, fell off a scaffolding and came down on his nates. The result was that he had more or less loss of power in his lower limbs with the usual difficulty in urination and defecation, and, in addition, there was anæsthesia of the perineum, scrotum and penis from the glans to the crus. There was no anæsthesia of the suprapubic region, nor of the testes which were sensitive to pressure. Ten days after the accident he had occasional erections and once, about the same time, a pollution. Potency was retained, and coitus could be indulged in normally with pleasurable sensations; but although the orgasm was present, there was no ejaculation at the time of coitus, the semen being retained in the urethra, flowing out slowly, drop by drop, after the coitus. The first coitus occurred four months after his accident. There is no mention in

the history of the case as to spermatozoa being absent in the seminal emission, and yet Bernhardt thinks that *impotentia generandi* resulted from this injury. It is difficult to see why Bernhardt thought so in this case; such an opinion may be correct in the generality of instances, but, if so, it is true only in a secondary sense, to wit, where it produces sexual impotence from inability to copulate. Otherwise I incline to doubt; but there is, as yet, too little in the literature of the subject to warrant a positive statement.

Hemiplegia, on the other hand, does not seem to have so much effect. The cases of Krügelstein and Rosse, mentioned on page 302, would tend to show that this variety of injury does not interfere with coitus, and Guy's cases would go to prove that it had no effect upon the fertility of the patient. The first case is that of a man who suffered from hemiplegia of his right side. Within three weeks as the extreme limit of time after the attack, he had connection with his wife. Since his attack of hemiplegia he has had three children whom he and his wife both believed were his own.

The second case occurred in a man who had a hemiplegic attack, also of the right side, on two separate occasions. He had three children, the first of whom was born about eighteen months after his first attack, the coitus taking place between his first and second attacks, and these three children there was no reason to doubt were his own.

Locomotor ataxia, on the other hand, in the earlier stages is often characterized by extreme sexual activity, and it is only later that sterility may be induced for the same reason as paraplegia, to wit, impotence, which by preventing sexual intercourse renders the man sterile, but only in a secondary sense.

CHANGES IN THE SEMEN.

The changes of the semen which particularly affect the subject under consideration are four, to wit, its *tenuity*, its *thickness*, and the presence of *blood* and *pus*. The other alterations of the semen, known as cyano-spermia and glauco-spermia, do not concern us, because they do not seem to affect the life of the spermatozoa; indeed, I question whether hæmo- and pyospermia should really find any place here, but they are mentioned because there seems to be an erroneous idea in the professional mind as to the injury wrought by these two varieties of disease upon the life of the spermatozoa.

First, with regard to the *thinness of the semen*. This is usually temporary, and is due to causes which are usually quickly remedied by restraint and prudent living. Ninety-nine times in a hundred, it comes from sexual excess of some kind, either *ex coitu* or *ex manu*. Abstinence usually restores the semen to its ordinary consistence, and it is thin, because the seminal vesicles are not able to furnish the peculiar secretion that gives the semen its thick appearance sufficiently fast to mingle with the secretion of the prostate, which probably forms the bulk of the emission, and, as a necessary consequence of the exhaustion, the testes are not able to secrete the spermatozoa; hence in these cases azoö spermia is usually concomitant. I very much doubt those cases of oligospermia which have been stated to be permanent. I believe they are *temporary, due to excesses, and remediable* as soon as the opportunity of rest and recuperation is afforded.

Brown gives the history of a case which is very interesting and unfortunately, incomplete. It is that of a man, of advanced age, who had been married for seven

years, and who had never been able to impregnate wife. She had been repeatedly examined, found capable of conception, and indeed was very anxious to have child. So far as the man's genital organs were concerned he was perfect, the only point noticed being that the m. testis was rather small. With this oligospermia was associated azoospermia. Examination of the prostate showed the latter to be normal, perhaps a trifle undersized; the ejaculatory ducts could be felt. He had been seen by many surgeons, both here and abroad, and they differed in opinion with regard to the presence of spermatozoa, some finding ill-formed spermatozoa in the semen, others finding none. Unfortunately, it is not stated whether this condition was congenital, or whether it had come on later in life. There was no history of any disease, traumatic or acquired, of the genito-urinary organs. His sexual power was normal, but no ejaculation followed the act. This I should judge must be a mistake, because, immediately afterward, it is said that he is obliged to wait at least ten days in order to accumulate a quantity sufficient in amount to examine, and when, at the end of ten days, he brought a specimen, amounted to 2 gm. of fluid, which was milky in appearance, and which did not appear to have come from the seminal vesicles at all, but, I should judge from the history of the case, was prostatic. No seminal crystals were found and the odor was characteristic. His personal history appears to be fairly good. The only vice he has been guilty of is that he cohabited at an unusually early age and perhaps to excess while a young man. Dr. Brown considered that there was a complete occlusion of all the genital tract back of the ejaculatory ducts, and the specimens that had been examined by him were derived from the prostate, from Cowper's glands, and the glands of the urethra. It is to be regretted that the history is

defective so far as his early life is concerned, that is to say, as to the question of his ever having had an ejaculation *in coitu* or *ex somno*. If not, this case should be regarded, it seems to me, as a case of aspermia, and not of oligospermia.

Of course, under circumstances in which from any cause the spermatozoa are absent or injured, the person is sterile, the scantiness and tenuity of the fluid make very little difference, except as one is a concomitant of the other.

Sterility, apparently, may also occur from the opposite condition; the semen may be too *thick* instead of too thin, and although the spermatozoa are abundant in the semen, the fluid itself is so dense as to prevent their motion. In other words, these animalculæ are blanketed in the fluid. Beigel gives a singular case of this kind. It occurred in a young woman who came from Java with her husband to consult Beigel with regard to her sterility. She had been married for some time, had no children, and was anxious to have some. Beigel examined her and found nothing the matter with her, she was perfectly sound; and he then directed his attention to the man. He was a fine, healthy man, with a good, clean history, without disease, and certainly from appearances there was no reason why he should not be a father. A specimen of his semen being obtained, it was seen to be abnormally thick, and under the microscope, it was found that the spermatozoa were embedded in this secretion which was so solid as to impede their movements. A drop of this thick semen was placed on an ordinary microscopic slide and diluted with a drop of lukewarm water, when the spermatozoa, as by magic, came to life, exhibited free and active movement and were, apparently, perfectly healthy. Beigel took the hint, and suggested that at the termination of coitus the woman should inject a few drops of lukewarm water into her vagina,

TREATMENT.

But very little can be done in the way of treatment. Of course, in cases where there is an anatomical disability, such as absence of the organs in any way, nothing can be done. Surgery is unable to replace what has been lost. The only cases, apparently, in which results may be obtained are in varicocele, neuralgia of the testis, urethral stricture, circumcision, and syphilis and gonorrhœal epididymitis in their earlier stages. Each is to be taken individually and on its own merits; but in the large proportion of patients my experience has been that very little can be done, differing in this respect from the results which we are enabled sometimes to get in cases of impotence.

PLATES.

PLATE I.



BOETTCHER'S CRYSTALS

PLATE II.



1. AMYLOID BODIES

2. HYALINE BODIES

3. BOETTCHER'S CRYSTALS

4. EPITHELIUM

5. LECITHIN BODIES

PROSTATORRHOEA

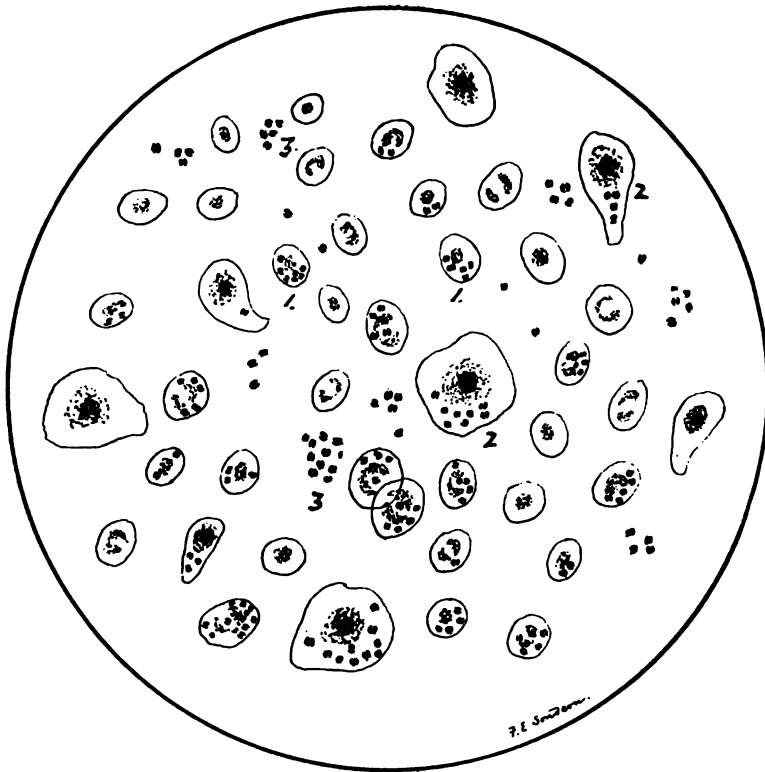
1. The first part of the document is a list of names and addresses of the members of the committee. The names are listed in alphabetical order, and the addresses are listed below each name. The list includes the names of the members of the committee, the names of the members of the sub-committee, and the names of the members of the advisory committee. The addresses are listed in the same order as the names.

PLATE III.



ETHRORRHŒA

PLATE IV.



1. PUS CELLS CONTAINING GONOCOCCI 2. EPITHELIUM CONTAINING GONOCOCCI
3. GONOCOCCI LYING FREE

**DIPLOCOCCI OF NEISSER (GONOCOCCI). EXTRACELLULAR AS
WELL AS IN THE PUS AND EPITHELIAL CELLS**

PLATE V,



- | | |
|-------------------|-------------------------|
| 1. HODENZELLEN | 4. BOETTCHER'S CRYSTALS |
| 2. AMYLOID BODIES | 5. EPITHELIUM |
| 3. HYALINE BODIES | 6. LECITHIN BODIES |
- AND SPERMATOZOA

NORMAL SEMEN

PLATE VI.

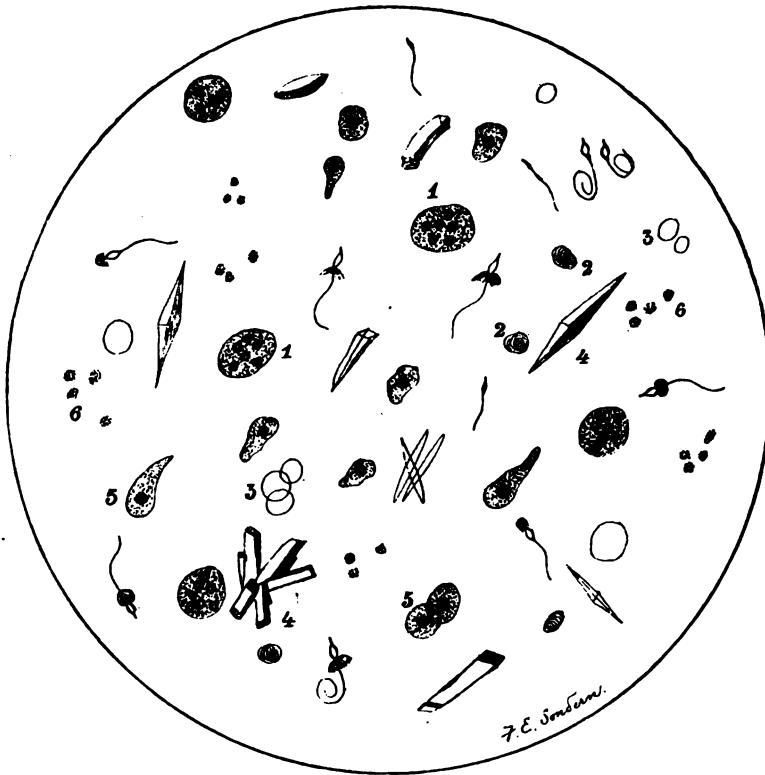


- 1. FATTY HODENZELLEN
- 2. AMYLOID BODIES
- 3. HYALINE BODIES

- 4. BOETTCHER'S CRYSTALS
- 5. EPITHELIUM
- 6. LECITHIN

AZOÖSPERMIA

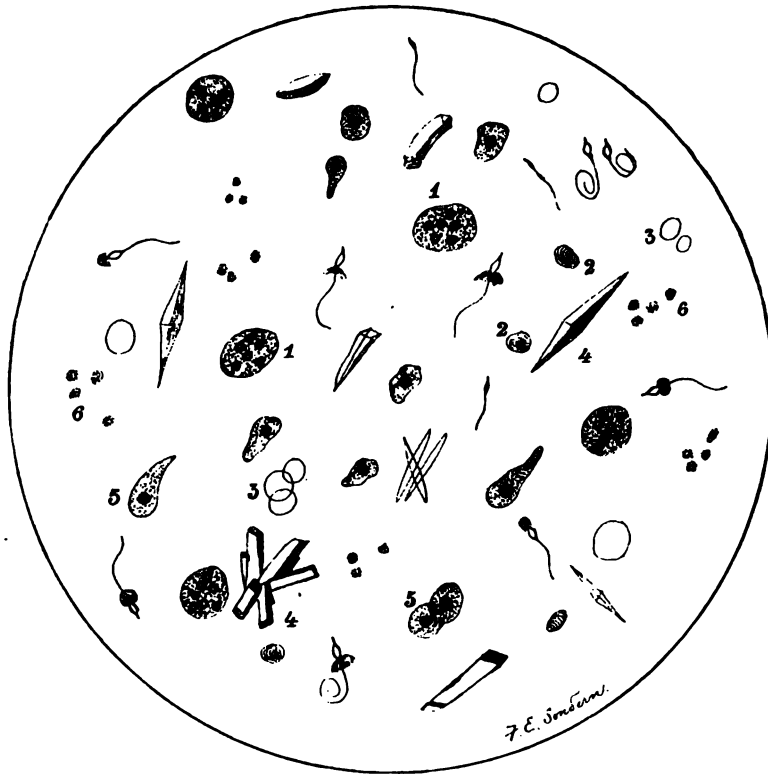
PLATE VII.



- | | |
|--------------------------|-------------------------|
| 1. FATTY HODENZELLEN | 4. BOETTCHER'S CRYSTALS |
| 2. AMYLOID BODIES | 5. EPITHELIUM |
| 3. HYALINE BODIES | 6. LECITHIN BODIES |
| AND DEFORMED SPERMATOZOA | |

OLIGOSPERMIA

PLATE VII.



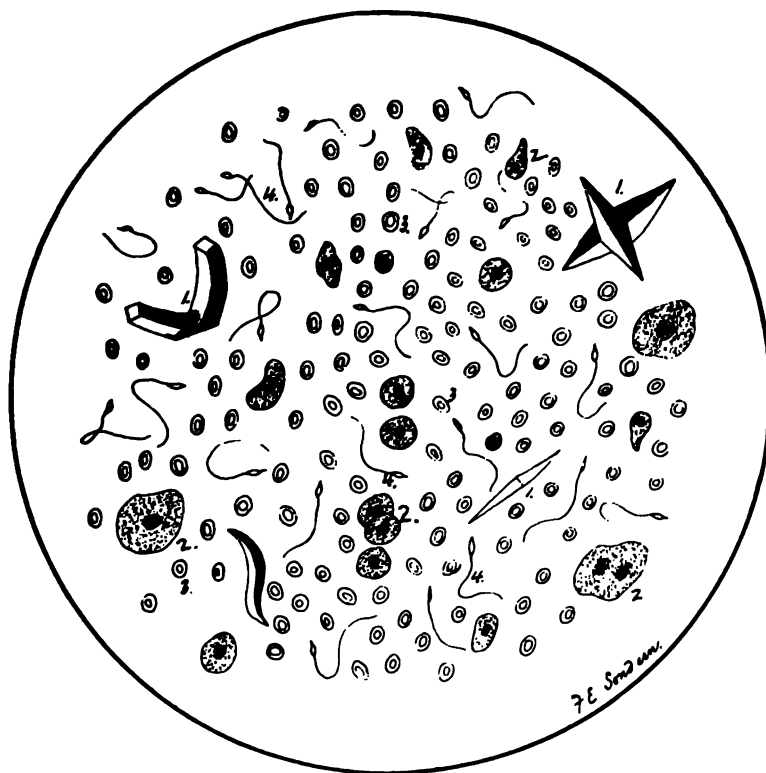
- 1. FATTY HODENZELLEN
- 2. AMYLOID BODIES
- 3. HYALINE BODIES

- 4. BOETTCHER'S CRYSTALS
- 5. EPITHELIUM
- 6. LECITHIN BODIES

AND DEFORMED SPERMATOZOA

OLIGOSPERMIA

PLATE VIII.



- 1. BOETTCHER'S CRYSTALS
- 2. EPITHELIUM

- 3. BLOOD CORPUSCLES
- 4. SPERMATOZOA

HEMO-SPERMIA

PLATE IX.



- | | |
|-------------------------|---------------------------------|
| 1. ROETTCHER'S CRYSTALS | 3. PUS CELLS |
| 2. EPITHELIUM | 4. SPERMATOOZA (SOME DEFORMED). |
| 5. BLOOD CORPUSCLES | |

PYO-SPERMIA

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